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ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

VOLUME XXI

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ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

VOL. XXI, PART I

NOTES ON THE SOCIAL ORGANIZATION AND CUSTOMS OF THE MANDAN, HIDATSA, AND CROW INDIANS

BY

ROBERT H. LOWIE

NEW YORK
PUBLISHED BY ORDER OF THE TRUSTEES
1917

NOTES ON THE SOCIAL ORGANIZATION AND CUSTOMS OF THE MANDAN, HIDATSA, AND CROW INDIANS.

By Robert H. Lowie.

PREFACE.

The Hidatsa, while most closely related to the Crow, have been in close contact with the Mandan for so long a period that the culture of all three tribes must be considered in conjunction. That is to say, it is impossible to acquire an accurate picture of Hidatsa life without taking into account, on the one hand, the persistence of old elements characteristic of the parent tribe before its division into Crow and Hidatsa and, on the other hand, the influence exerted by the Mandan subsequently to the Crow separation. Our information on the Mandan, for reasons stated below, is tantalizingly meager and suggests rather than solves problems. Fortunately, the Crow data are sufficiently extensive to permit a comparison of their social culture with that of the Hidatsa and to make possible a reconstruction of their pristine organization. In a previous paper of this series issued in 1912 (Vol. IX, part II) I dealt with the "Social Life of the Crow Indians." Since its appearance I have paid several visits to this people and have secured much additional information, which partly confirms and in part supplements and amends my earlier results. I have naturally devoted much more space to the new material but found it necessary to summarize briefly some facts previously described.

A few words may be in place regarding the method followed in illustrating the use of Crow kinship terms. It has become clear to students that relationship nomenclature harbors innumerable pitfalls for the field investigator. These can be minimized only by utilizing every possible means of checking the information obtained. We must not content ourselves with abstract statements nor even with the confirmation supplied by a genealogical scheme but should determine the use to which terms are put by the native when not harried by ethnological questioning, when, in other words, he is in a perfectly normal and naïve position with reference to his tribesmen. One way to do this is to keep one's ears open in Indian households when not ostensibly engaged in belaboring the aboriginal consciousness; another equally effective one is to collect systematically the evidence yielded by mythological texts. It is even possible to make use of myths taken down in English provided the recorder insists on noting down in the vernacular every relationship term that occurs.

The Hidatsa and Mandan were visited in the summers of 1910, 1911, and 1913, while my acquaintance with the Crow dates back to 1907 and has been frequently renewed since.

Robert H. Lowie.

June 15, 1917.

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SOCIAL LIFE OF THE MANDAN.

Clan System.

The study of ancient Mandan society is rendered unusually difficult through the almost complete extinction of the tribe. There are probably not more than half a dozen full-blood Mandan living on the Fort Berthold Reservation in North Dakota. Though the census of 1910 sets their number at 197, this is given on the basis of the native way of tracing descent so as to include all those whose mothers only were Mandan or were according to the matrilineal principle of descent reckoned as Mandan. Living for a long period in close contact with the more numerous Hidatsa, with whom intermarriage has taken place to a considerable extent, the younger Mandan so-called hardly ever speak Mandan as fluently or correctly as Hidatsa.[1]

Under these circumstances the question naturally arises over and over again whether a given feature common to Mandan and Hidatsa culture is not an Hidatsa trait shared by the Mandan only since their practical absorption in the neighboring tribe. This naturally complicates the sufficiently difficult question as to the relative contributions of the two tribes to their common cultural stock. On this subject widely varying views have been held. Thus, Morgan, rather cavalierly assumed that agriculture and the earth-lodge were brought into the region by the Hidatsa and borrowed by the Mandan,[2] while Matthews has expressed the opposite opinion.[3]

Since in culture the Hidatsa differ from the Crow far more than the affinity of the two languages and hence presumable recency of their separation would lead us to expect, it seems natural to refer such divergence as exists to Mandan influence on the Hidatsa. This interpretation would lead to thoroughly satisfactory results if we could be sure that recently collected Mandan data indicating cultural identity with the Hidatsa reflect ancient Mandan conditions. Unfortunately, we are frequently without the means of checking our information on account of the inadequacy of the early accounts.

A point of great importance regarding the Mandan is their local and linguistic differentiation. Whatever may be the fact as to the nine villages they are said to have inhabited about the Heart River confluence in 1750,[4] or the thirteen villages with which Maximilian's informants credited them,[1] in the beginning of the nineteenth century there certainly were two villages, Nū'pta (Ruhptare) and Mį'tutąk (Mihtuttahangkusch), speaking distinct dialects, as is demonstrated by Maximilian's vocabularies.[2] One of my informants added a third village, Istápe, (given by Morgan as a clan name), where she said the Nū'pta dialect was spoken.

---

[1] It may be noted in this connection that these languages, though both of the Siouan stock, are only remotely related.

[2] Morgan, (b), part II, chapter 6.

[3] Matthews, 37f.

[4] Handbook of American Indians, I, 797.

It is clear from Maximilian's data that between Nū'pta and Mį'tutąk there was also a minor cultural differentiation in the matter of dances. The question in connection with our immediate problem is how to conceive the relation of the villages to the social divisions. Maximilian tells us that the Mandan called themselves "Nū'mangkā'ke" (*nū'makā'ki*) i. e., people, and were wont to add the name of the village from which they had originally come. Thus, there were Prairie-chicken people, so-called after the Prairie-chicken village; Bear people, Cactus people, Badger people,— all named from corresponding villages.

> Obgleich nun alle die oben genannten Dörfer nicht mehr existiren, so nennen sich dennoch alle diese Indianer ihrer Abstammung zufolge noch nach denselben.[3]

This is a clear-cut statement to the effect that the Mandan clans developed in recent times from formerly distinct local groups. If we assume that the ancient village scheme involved local exogamy and matrilineal descent, or that the latter was grafted on the former, possibly through borrowing, the fusion of people from different settlements would quite naturally lead to the evolution of exogamous clans. The statement of one of my informants that all the clans were found in both Mį'tutąk and Nū'pta is not inconsistent with such a line of development since this condition would be readily brought about by intermarriage. However, all this is pure speculation and the questions involved will only become clearer after considering the social organization of the Mandan as sketched by recent informants and comparing it with that of the Hidatsa and other tribes.

The Mandan were divided into non-exogamous moieties corresponding in name to those of the Hidatsa, viz., Three-clans (nū'makā'ki ō'rehɛ nā'mini) and Four-clans (nū'makā'ki ō're tōp). According to Black-chest, the names of the moieties and the constituent clans were originated by the legendary warrior Seven-wolf when returning from a victorious expedition against the Arikara. Information is very meager as to the functions of the dual division in tribal life, but here there is again close correspondence to Hidatsa conditions. During a general council of the Mandan the Three-clans were ranged on one side, the Four-clans on the other. In building an earth-lodge the Three-clan women would put earth on one side and the Four-clan women on the other.

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[1] Maximilian, II, 103.
[2] *ibid.*, 557–561.
[3] *ibid.*, 104.

It is altogether improbable that the Hidatsa and Mandan moiety systems should have had an independent origin. The question at once arises, then, which was the borrowing tribe. The complete lack of any trace of the dual division among the Crow suggests that the Hidatsa imitated the Mandan scheme, a conclusion which I was at first tempted to draw. However, there is no satisfactory evidence on behalf of this interpretation. In the first place, the moieties of the Winnebago, the closest linguistic allies of the Mandan, were exogamous, while there is no indication that this applies to the Mandan and Hidatsa divisions; moreover, the Mandan differ from all other Siouans and resemble the Hidatsa and Crow in the rule of matrilineal descent. There is thus no *a priori* reason for assigning the rôle of transmitter to the Mandan rather than to the Hidatsa. Secondly, there is a disparity between the designations of the Mandan moieties and the number of their clans such as does not occur among the Hidatsa. Some informants, to be sure, make the number correspond to the moiety names, and Morgan without speaking of a dual division lists seven clans. But other Mandans give the number as eleven or even sixteen, while nine are reported by Mr. Curtis. The informant who spoke of sixteen clans added that more of them belonged to the Four-clan than to the Three-clan moiety, but this struck me as an obvious afterthought,— as a secondary attempt to harmonize as best he could two sets of contradictory facts. Although the information obtained is hardly sufficient to permit a definite solution, I rather incline to Mr. Curtis's view that the Mandan moiety scheme is derived from the Hidatsa, whose clans conform in number to the moiety names.

The following scheme was furnished by Two-chiefs, herself a member of the first-named clan: —

Three-Clan Moiety.

maxi′ ‘kina
tamī′sik
nū′pta

Four-Clan Moiety.

si′ pucka nū′mak, Prairie-chicken people
xtaxtám nū′mak, Young white-headed Eagle[1]
mánakactək nū′mak, People all in a bunch[2]
xō′xixą̄‘ ka nū′mak, Crow people (said to refer to the scalp on a stick)

---

[1] Mr. Curtis, (v, 145), translates the word "Spotted Eagle."

[2] Presumably Mr. Curtis's Madhakashtak, "Clump of Wood."

In this list it will be noted that the third name in the first moiety coincides with that of the Nū′pta village and dialectic division. Black-chest, of the same moiety, substituted the ma′nakactək for the nū′pta, and Turtle-woman, likewise a Three-clan, gave the tamī′kɛxik in the same place. This name suspiciously resembles another, tamī′kaxik, Bad Packstrap, which the same authority gave as an ancient designation of the maxi′ʿkina people, who were so named because they used poor string to tie with. Both Black-chest and Turtle-woman regarded the tamī′sik as equivalent to the Hidatsa mɛ′ᵋ tsirō‵ke (Knife) clan. There is no suggestion that this was meant to interpret the meaning of the name, and Turtle-woman said that the tamī′sik were Wolf people. This is probably merely a symbolic reference since the words for "wolf" are quite different in Maximilian's vocabularies. As regards the constitution of the Four-clan moiety, Turtle-woman and Two-chiefs are in perfect agreement.

Calf-woman said that there were eleven clans grouped in moieties but made no attempt to classify the ten names she actually supplied. Like Maximilian, she regarded all the clans as connected with different villages; accordingly, it is not surprising that she should have included nū′pta in her list. On the other hand, several others are omitted in her enumeration, which follows: —

si′ pucka
xtaxta′ nū′ma ᵃkɛ
mī′ti ā′ki, Village above
maxáhe
tamī′sik
ō′rɛᵋ ʿkū‵pa, Seven-different-kinds
mā′ak ī′xtit mī′ti, Hilltop village
mī′tixā‵rɛ, Scattered village
mī′iʿtik ɛ′exicot nū′makā‵ki, White-bellied mouse people
nūptarɛ

Three names not recorded by me at all are given by Mr. Curtis,— the masē′ (kshuk), Red Butte; the matēk, Badger; and the madhadhacu, Charcoal. Of these the Badger people are also mentioned by Maximilian, but his Bear and Cactus villages seem to have no equivalents in either Mr. Curtis's or my own lists. Morgan's [1] list of seven clans includes the Prairie-chickens, Maximilian's Bear and Calf-woman's Village-above people,— also a Wolf (Horata), Good Knife (Tanatsuka), Eagle (Kitanemake), and Flathead (Estapa) clan.

---

[1] Morgan, (b), part II, chapter 6.

According to Calf-woman, the Prairie-chicken clan is the most important on the Reservation. This is consistent with Mr. Curtis's data, according to which the larger moiety bears the name of this clan, corresponding preëminence being assigned to the tamī′sik in the Three-clan moiety. It should be noted that the Prairie-chicken clan is the only one common to the Hidatsa and Mandan series.

Calf-woman's ō′rεᵋ ‘kūpa (nitε) was given by Turtle-woman not as the designation of a clan but of all the seven clans jointly in addressing the entire tribe.

Mr. Curtis states that the marriage of fellow-clansmen was considered improper and publicly ridiculed, but according to my witnesses this rule has long ceased to be absolute. Thus, Calf-woman declared that sometimes people married within their own clan, though there were some who regarded this as wrong; and Two-chiefs, a maxi′ ‘kina married to a xtaxta′, cited the case of her husband's mother who had married another xtaxta′, not related by blood.

KINSHIP TERMS.

A brief but in most respects accurate statement as to Mandan kinship nomenclature is made by Maximilian.[1] Recently Mr. Curtis has summarily characterized the Mandan terminology as largely influenced by the clan factor, the father's brother and his clansmen being classed with the father, the father's clanswomen with the father's sister, all mates in one's clan with brothers and all females as mothers.[2] This statement is undoubtedly in large measure correct, but, the last part is manifestly not to be taken literally since the mother's mother and her generation and the sisters are certainly not called "mother." Morgan already had to contend with the difficulty of finding interpreters fully conversant with Mandan and offers an avowedly imperfect list. So far as essentials are concerned, he correctly characterizes the system as of the usual classificatory type. The most important deviation from the norm mentioned in his résumé consists in the classification of the father's sister with the mother in feminine parlance, a distinctive word for paternal aunt being used only by males.[3] My data yield no confirmation of this peculiarity. A remarkable feature found by Morgan among the Hidatsa and Crow but not noted by him among the Mandan, though recorded both by Mr. Curtis and myself, is the confusion of generations in the designation of the father's sister's female descendants through females, all these relatives being classed with the father's sister regardless of generation.[1] The question arises whether this trait was borrowed by the Mandan, possibly since their practical absorption in the neighboring tribe. Another peculiarity not indicated by Morgan in his discussion of the Mandan system, though emphasized in his treatment of the Hidatsa and Crow terminologies, is the classification of the maternal uncle with the elder brother. In Mandan this is optional and there is an alternative specific designation for the mother's brother, while Crow and Hidatsa lack any separate word for this relative. From the great rarity of this feature and the simultaneous use of a distinct word for the mother's brother, which moreover is the only designation given by Maximilian and Morgan, I infer that the Mandan borrowed from the Hidatsa the classification of the uncle with the elder brother. This seems to me the more probable because according to the more trustworthy of my informants the sister's son is not addressed as "younger brother" but only by a distinct term correlative with that for mother's brother. But the Hidatsa mode of classifying the maternal uncle is of a piece with the Hidatsa designation of the female descendants of the paternal aunt, i. e., in both cases the same principle of emphasizing clan affiliation to the extent of disregarding generation finds expression. It is, therefore, likely that both features were borrowed by the Mandan.

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[1] Maximilian, II, 132, 543.

[2] Curtis, V, 145.

[3] Morgan, (a), 184.

With the aid of two informants, Two-chiefs and Calf-woman, I secured the following imperfect list of kinship terms.

tatϵ′ (vocative only). Father, father's brother, father's sister's son.

tatϵ′xihe, tatϵ′xis (voc.). Father's sister's husband, husband's father, grandfather, greatgrandfather.

mā′ats, tatϵ′ena (non-voc.). Father, father's brother, father's sister's son.

mā′txis (non-voc.). Father's sister's husband, grandfather.

tà tϵrité (voc.). My fathers, i. e., my father's fellow-clansmen.

nō′atō‘oc (non-voc.). Father's clansman (man speaking).

nō′atōre (non-voc.). Father's clansman (woman speaking).

ptū minikϵ′ (voc.). Father's sister, father's sister's daughter, father's sister's daughter's daughter, etc., *ad infinitum.* Non-voc. form: ptū′miniksϵ‘ena.

naϵ′ (voc.). Mother, mother's sister, father's brother's wife.

nā′xic, nā‘xihϵ′ (voc.). Grandmother, husband's mother.

mihu′xis (non-voc.). Grandmother.

---

[1] Morgan's schedules regarding the descendants of the father's sister are blank for the Mandan, (a), 322–330.

ō′mihū‵ruc (non-voc.). Mother, mother's sister, father's brother's wife.

tàwaratōrɛ′ (voc.). Mother's brother (see p. 12 and below). Non-voc. form: tà waratōsɛ′ ena.

ptā′rumaks. Mother's brother (w. sp.).[1]

mū‵ uká (voc., m. sp.). My elder brother, mother's brother, father's sister's son's son older than ego, father's brother's son older than ego, mother's sister's son older than ego. Non-voc. form: mū‵ ukasɛ′ ɛna.

micų ka′. My younger brother (m. sp.), elder or younger brother (w. sp.); father's sister's son's son, father's brother's son, mother's sister's son.

ptamihɛ′ (m. sp.). Elder or younger sister, father's sister's son's daughter, father's brother's daughter, mother's sister's daughter, brother-in-law's wife.

mīrukɛ′ (w. sp.). Elder sister, father's sister's son's daughter, father's brother's daughter, mother's sister's daughter.

ptą‘ ka′ (w. sp.). Younger sister, father's sister's son's daughter, father's brother's daughter, mother's sister's daughter.

minikɛ′ (voc.). Son (m. sp., w. sp.), brother's son (m. sp., w. sp.), sister's son (w. sp.), mother's brother's son. Non-voc. form: mini′ks.

kunika′ (voc.). Son, grandson.

minū′hakɛ‵ (voc.). Daughter, brother's daughter (m. sp., w. sp.), mother's brother's daughter, sister's daughter (w. sp.). Non-voc. form: minū′haks.

ptū‵haxka′ (m. sp.). Sister's son, sister's daughter.

ptawį′ haka. Grandchild, son's wife, grandson's wife.

màratō ka′ (voc.). Husband, wife. Non-voc. form: mà ratōka′sɛᵋ na.

mī′morus (non-voc.). Husband. kō′worus, her husband.

nokā ka′ (voc.). Wife, husband.[2]

mū′us (non-voc.). My wife, k‘u′us; k‘u′uhe, his wife.

ɛ′ ecehak (voc.). Husband's brother.

nisi′kɛ. Husband's brother, kocu′ka, (probably) her husband's brother. This last may simply mean "his brother."

mō‵ wa ‘kihɛ′. Wife's brother, sister's husband (m. sp.).

ptunɛ′. Brother's wife (w. sp.), husband's sister.

nō′hakamihɛ. Brother's wife.

mū′ uhō‵rakɛ (m. sp.). My brother's wife.

p‘t‘ ū′te, p ‘tūts. Daughter's husband.

---

[1] This word was given only by Calf-woman, who considered mū′uka as the corresponding male term.

[2] One informant gave māratōkā for husband, and nokākā for wife, the other reversed these interpretations, probably there are two words both designating the spouse regardless of sex.

nō′hakàs. Daughter's husband.
pta +i′ maratok̓ās. My wife's father.
ptù hiní ks. My wife's mother, my wife's mother's sister.

It will be noted that beyond the second ascending and the second descending generations no relatives are designated by special terms, lineal and collateral ancestors being classed with grandparents and descendants with grandchildren, regardless of male or female lines. This fact is borne out in detail by Morgan's schedules. According to these, it would appear that no distinction was drawn between the father's father's and the mother's mother's sister, nor between the father's father's and the mother's mother's brother. On the latter point I unfortunately failed to get data, which would have been of interest in comparison with the Hidatsa usage of classing the maternal grandmother's brother with the elder brother. According to Morgan the word for grandchild was also applied to the sister's grandchild (w. sp.), brother's grandchild (m. or w. sp.), and the sister's son's wife (m. sp.).

With the father Morgan, doubtless correctly, classes the mother's sister's husband and the stepfather. His identification of the father's sister with the mother in female parlance, however, seems doubtful since both my informants were women but gave a single word for the paternal aunt, corresponding to one of Morgan's terms for male usage. A second word given by Morgan for the father's sister (m. sp.) *mä-sá-we*, is not Mandan at all but unmistakably the Hidatsa *bacā′wi*, which is used by both sexes. On the other hand, Morgan has only the equivalent of *tà waratorɛ′* for the maternal uncle, while I also obtained a distinct word for women's use as well as the classification with the elder brother (by men only?).

Except for the applications already mentioned, my connotations for the elder brother term closely coincide with Morgan's, which is also essentially true of the younger brother category. The essential point here is that women have a single term for elder and younger brother coinciding with the men's word for younger brother, the men having an additional term for the elder brother.

In the designation of sisters there is only partial parallelism. To be sure, the women (i. e., members of the sex of the person designated) have two distinct words for elder and younger sister, while the men have only one. The men's generic term, however, does not coincide with either of the women's words so that there are not two words but three to be reckoned with. Here Morgan agrees as regards the men's word, but differs in ascribing a single generic term to the women. Analogy, not only with the brother terms but also with the usage of other Siouan tribes, such as the Winnebago, strongly suggests that Morgan is in error.

My list contains two words for son without clear differentiation. Morgan practically restricts *minikɛ′* to male and *kunika′* entirely to female speech. The latter word is also translated by him to cover the brother's son, sister's son, father's brother's son's son, mother's sister's son's son and mother's sister's daughter's son,—all with a woman speaking. He interprets *minikɛ′* to cover the son, brother's son, father's brother's son's son, mother's son's son and stepson in male speech, and the stepson and father's brother's daughter's son in female speech. The two last-mentioned meanings are not very convincing; more particularly, the father's brother's daughter being classed with the sister, her son would logically be a sister's son, i. e., a "son" for women according to the usual classificatory rules, and it is not at all clear why this particular "son" should be distinguished from others by substituting a word ordinarily confined to male usage. It is further strange that a woman should use a single word for brother's and sister's son. On the other hand, my own list of meanings for *minikɛ′* is rendered somewhat doubtful by extending the word to the brother's son of both men and women. A similar feature of the daughter category, however, viz., the classing of the man's brother's daughter with the woman's, is supported by Morgan's as well as my own informants.

One of my words for husband, *mī′ morus*, is approached by Morgan's *me-mer-ul*, while his *moo-hul* and his *moo-ha* for wife and brother's wife are at least of the same stem as my *mū‘ us* and *mu′ uhō‘akɛ* (m. sp.). I did not get the words by which the wife's and the husband's fathers and mothers address each other, but analogy with other Siouan systems supports Morgan's statement that there are distinct terms, which he gives as *kote′-he-a* for the father-in-law and *me-ho-he-a* for the mother-in-law. My list also lacks a word for wife's sister, which Morgan gives as *noo-ko-ho-mus.*

Instead of *koo-too′-min-ik* I have *ptunɛ′* for brother's wife (w. sp.); Morgan's informants, consistently enough, included under his term the father's brother's son's and the mother's sister's son's wife. In my list the husband's sister is put into this category.

To my *p‘t‘ū′te* for daughter's husband clearly corresponds Morgan's *p'too′-ta*, brother's daughter's husband (m. sp.), which indicates that his *ko-too′-te* is merely a form of the same stem. He gives many connotations for this word, none of which (except son-in-law) is given in my series. Thus, Morgan, translates it also "husband's father" and "husband's mother" and reciprocally "daughter-in-law" (m. sp. and w. sp.), but here judging from analogy, he is almost certainly wrong, the latter relative being classed with the grandchild, the parents-in-law with the grandparents, as my list indicates. Consistently with his classification of the brother's with the sister's daughter (w. sp.) and with the customary classificatory extensions, Morgan further lists under the same caption the brother's son's wife, brother's daughter's husband (w. sp.), sister's son's wife (w. sp.) and sister's daughter's husband (w. sp.). Of these meanings only those applied to men are compatible with my data.

My *mō′ wa‘k i kɛ′*, wife's brother, sister's husband (m. sp.) is phonetically the equivalent of Morgan's *wo-wä′ ke-a* and *wo-wä-ke.* He gives various additional meanings, viz., sister's husband (w. sp.), husband's brother, sister's daughter's husband (m. sp.), father's brother's daughter's and mother's sister's daughter's husband. The two last-mentioned meanings follow of course from the meaning "sister's husband." That a woman should call the sister's husband by the same term applied by a man to his brother-in-law, seems rather improbable, but unfortunately I did not get evidence on this point. On the other hand, I have two distinct terms for the husband's brother, so that in this respect Morgan's data seem inaccurate. Altogether it is regrettable that the terms of affinity are involved in so much doubt.

SOCIAL CUSTOMS.

On this subject I only collected a few items, some of which, however, are of some comparative interest.

As among the Hidatsa and Crow, there was a joking-relationship, which obtained among the sons and daughters of men belonging to the same clan. These relatives, if such they may be styled, were called *ī′irusit.*

Regarding cross-cousin marriage, Two-chiefs said that it was permissible for a man to marry the daughter of a mother's clansman but not the daughter of a mother's own brother. On the other hand, Turtle-woman declared that it was proper for a girl to marry her father's sister's son, and my Hidatsa interpreter explained that this was a point in which Mandan and Hidatsa practices diverged.

Not only the wife's mother but also the mother-in-law's sisters and mother avoided the husband.

SOCIAL LIFE OF THE HIDATSA.

INTRODUCTION.

The Hidatsa (Minitari, Gros Ventre of the Missouri) form, with the closely related Crow Indians, a distinct branch of the Siouan family. They now reside on the Fort Berthold Reservation in North Dakota, which they share with the Mandan and Arikara. According to the census of 1910 they number 547.

Before the smallpox epidemic of 1837 the Hidatsa were settled in three villages on the Knife River, which they occupied at least as early as 1796 and where they were visited by Lewis and Clark's expedition, by Catlin, and by Maximilian. By far the largest of these villages was that called Hirā′tsa, which in Maximilian's day included over eighty earth-lodges; it was situated on the north bank, about three miles from the Missouri. Both the others were on the south side,— Awatixā′ati half a mile above the mouth of the Knife and Awaxā′wi at the embouchure. The former was made up of about forty, and the latter of eighteen earth-lodges. Maximilian estimated the total population at between 2,100 and 2,200.[1] Tradition speaks of two additional sites, those of Xū′ra and Awati′ə, which are referred to as constituting with the foregoing the "Five Villages."

The Awaxā′wi language differed dialectically from that of the Hidatsa. proper. To illustrate this point Buffalo-bird-woman told the following story. An Awaxā′wi and an Hidatsa once went looking for buffalo. The Hidatsa said, "There's a bull." The Awaxā′wi answered, "awakā′ts," which meant "I see it" in his dialect[2] but "It is a badger" in Hidatsa. The Hidatsa said, "No, it is not a badger." They had a dispute about it and soon came to blows.

Owing to the ravages of the smallpox epidemic the three villages were consolidated into one, and accordingly it is impossible nowadays to get first-hand data as to the relations of the three villages when they represented distinct communities. Several individuals are remembered as belonging to the Awaxā′wi, among them Poor-wolf, Small-ankle, and Juneberry. Marriages are said to have taken place both within and without the village group. Maximilian enumerates distinct chiefs for each village, and

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[1] Maximilian, II, 212 f.; Matthews, 15, 38; Handbook, art. "Hidatsa."

[2] In Hidatsa the accent is on the second syllable of *awa′kats.*

I have little doubt that the villages were independent of one another. There is no question that there were slight cultural differences. Thus, I was told that the *miraraxúxi* society [1] was confined to the Awaxā'wi, and peculiarities of this sort might be inferred by analogy from the Mandan conditions, for as we have seen the Nū'pta had developed certain specific traits in Maximilian's time.

GOVERNMENT.

For reasons already given it is impossible to understand fully the political relations of the several villages prior to consolidation. We may reasonably assume that they formed uniformly friendly and autonomous groups corresponding to the local bands of nomadic Plains tribes.

The form of internal government in a village is likewise not quite clear. My principal informant introduced the concept of the "winter chief," whose term of office began in the fall when the leaves turned yellow and expired with the melting of the snow. According to this witness a new winter village was built every year. The winter chief was a man associated with some medicine bundle, but as to the exact method of his selection no data were obtained. When chosen he put a pipe before his bundle and prayed. He often prayed thus during his term of office. He was responsible for the safety and welfare of the people. On the other hand, he was entitled to credit if the buffalo were abundant and if many enemies were killed during his incumbency. In fact, he was permitted to reckon as his own any war honors won during this period. Sometimes there was no chief because the man chosen was unwilling to risk the responsibilities of the position. The ideal chief seems to have been a man of general benevolence who offered smoke to the old people and feasted the poor.

My informant recounted the chiefs for every year from about 1845 to 1875. I got the impression that this was the Hidatsa method of designating years, corresponding to the Crow scheme of denoting each year by some significant happening.[2] The names of the Hidatsa chiefs were sometimes but by no means always followed by a statement as to some important occurrence, e. g., "Four-fingers, a Sioux was killed that winter;" "Long-hairs, many buffalo came to the village."

I neither discovered how the village was governed during the summer nor what was the position of the retired chief. As regards Big-cloud (about 1845), who is said to have conducted the movement to Fort Berthold, I got the information that he was entitled to honor marks in the summer as well as in the winter and indeed remained a chief all his life. The latter statement may simply mean that he remained always a man of distinction, but since he is mentioned as the leader of many war parties his social status may have been the result of his martial record rather than of his former chieftaincy.

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[1] Lowie, (d), 237.

[2] Lowie, (c), 242.

The power of policing the village was vested in the Black Mouth society, one of the age-organizations, whose activities have been fully described in a previous publication.[1] Their principal functions were twofold. They superintended the communal buffalo hunt so as to prevent the premature stampeding of the herd; and they attempted to remove any misunderstandings among fellow-villagers. Thus, if an Hidatsa had killed another, the relatives of the slain man might plot revenge; but the Black Mouths would gather together property and offer it to the aggrieved people, fill a pipe for them to smoke, and by gentle words would conciliate them and cause them to give up projects of revenge.

MOIETIES AND CLANS.

The Hidatsa are divided into seven matrilineal clans, grouped in the Four-clan (*nā′ki tō′pa*) and the Three-clan (*nā′ki rā′wi*) moieties as follows:—

Four-Clan Moiety.

tsī′tska ruʻpā′ke,	Prairie-chicken people
awa′xe rā′wita,	?
miripā′ti,	Real Water
iʻticúxke,	Wide Butte

Three-Clan Moiety.

maxō′xati,	?
mɛ′ɛ tsirōʻka,	Knife people.[2]
apʻu′ ʻka mika′,	Lower Cap

These moieties and clans were represented in each of the old Hidatsa villages.

Morgan [3] does not speak of the dual division but lists the seven clans as given above, his Hidatsa words being clearly the equivalents of mine. His translations differ to some extent, being the following: Prairie-chicken, Unknown-animal, Water, Hill-people, Lodge, Knife, Bonnet.

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[1] Lowie, (d), 274.

[2] The native word was said to belong to the old Hidatsa language.

[3] (b), part 2, chapter 6.

The clan origin legends I was able to get are of the trivial character typical of the corresponding Crow traditions. It is said that a few young men on a war party stopped over night among some *macúgākca* bushes, such as the prairie-chickens frequent. Accordingly, the rest of the people called them "Prairie-chickens." This story, like the comparable Crow Indian tales, naïvely ignores the fact of maternal descent. The name *miripā'ti* is said to refer to Devil's Lake. When the people of this clan were asked by the other Hidatsa where they came from, they replied "Real Water," meaning the lake mentioned. A second explanation of the name was obtained. Some *miripā'ti* had killed one of their clan. They moved away and built a village of their own on the site of the old Hidatsa village of Xū'ra. They were afraid to go out in the dark because of the relatives of the murdered man, so they kept a large supply of water for the night. One of them kept water in a paunch. This man said, "Well, I am afraid to go outside, so I keep this water, but now I don't want to drink." So he ran his knife through the paunch and the water flowed out. His clan was therefore called *miripā'tahe*, Punching-water, which name was afterwards altered to *miripā'ti*.

The Prairie-chicken people did not consider prairie-chickens as sacred in any way except if a clansman had chanced to see one in a vision. Then he would pray to it and would not kill it under normal conditions; but if hungry he would do so.

Each clan wished to establish a reputation for bravery. Fellow-members tried to dissuade one another from disgraceful doings, of which all had to bear the blame. Thus, if a Prairie-chicken man had committed murder, his clansmen were all ashamed for other people would say, "The Prairie-chickens are murderers."

The clans were exogamous but the subjective attitude towards infractions of the rule seems to have been even milder than among the Crow.[1] They were regarded as improper but not as shockingly unethical. Thus, Wolf-chief said that while very few married within the clan the other people would simply comment on it by saying, "They like each other, we can't help it." According to another informant, a man who married a woman of his clan was called *maru' 'ta*, "foolish," or *ī' rooca 'tsac*, "belonging to the same group," by his joking-relatives but others would not take any notice of his actions. If a Prairie-chicken man married a Mandan woman of this clan, there was no objection even on the part of the *makútsati*. The children of an endogamous Prairie-chicken clan union were called *tsī′ ts ka(a)waxé*, "Prairie-chicken high hill"; the informant thought in the old language the word was *awaxaí*. No further explanation was secured.

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[1] Lowie, (c), 188 f.

The relations obtaining among members of the same clan and opposite sex are comparable to those between brother and sister. The clanswomen would make quillwork, shirts, leggings, moccasins, and robes for a clan brother, and hand them to him, saying, "Brother, I bring this for you." In return they would be presented with a horse.

When an Hidatsa marries a Mandan, the children are members of the mother's clan and tribe. In the relatively far rarer cases of marriage with an Arikara woman, the children would of course be Arikara; they would not be affiliated with any Hidatsa clan unless they were adopted.

Buffalo-bird-woman's maternal grandmother once bought a little Crow girl for a horse and plenty of goods. She adopted her as a daughter, thus making her a Prairie-chicken, whereby the Crow woman's children also became Prairie-chickens. If a woman of another tribe married into a polygamous household, she was reckoned of the same clan as the other wives (who were usually sisters).

The moieties had no marriage-regulating functions. This statement rests on explicit dicta of the natives and is also borne out by the list of marriages. Further, the dual division does not seem to have had any connection with athletic games.

Though it is not easy fully to comprehend the nature of the Hidatsa moieties, it is clear that their functions were in part political. Whenever matters of tribal moment were to be debated, the grouping of men was based on the dual division. This happened, for example, when treaties were concluded with the United States. In such a case, either moiety as a body might agree to abide by the decision reached by the other. A similar arrangement was said to exist nowadays between the Mandan and Hidatsa. When the government issued calicoes, the Hidatsa also divided into two groups. Then the Four-clans might say, "Three-clans, take this pile; we Four-clans shall take the remainder." Being more numerous, the Four-clan people would get a somewhat larger share.

In the old days each moiety had its own territory for eagle-hunting, and the complementary moiety was forbidden to hunt eagles or use the pits there.

Big-cloud, Bobtail-bull, and Cherry-necklace, all members of the Three-clan moiety, were chiefs, but there were more chiefs belonging to the Four-clans. To what extent this was connected with the numerical preponderance of this moiety, it is impossible to say definitely.

Judging from the frequency of references to the moieties by the natives, I believe that they loomed as important divisions in their consciousness. Nevertheless it seems reasonably certain that their antiquity is not so great as that of the clans. The complete absence of any trace of moieties among the Crow seems decisive on this point, while the *clan* concept of the two tribes practically coincides, as do their notions as to the functions of the father's clan. In short, vital features of Hidatsa social organization are shared by the Crow. If the moiety division is an ancient Hidatsa institution, why do we fail to find even a trace of it among the Crow? This argument is strengthened by the evidence afforded by the kinship nomenclature. Abundant proof exists for the influence of the clan organization on kinship terms, but I fail to find a trace of the specific effects of a dual organization, whether we assume that exogamy was or was not at one time associated with the moieties. In an exogamous moiety system, e. g., the two types of cross-cousins, father's sister's and mother's brother's child, are of the same moiety; yet we shall see that these types are sharply distinguished in Hidatsa by a difference of generations. Again the mother's brother is *not* classed with the father's sister's husband, after the manner of some tribes where this feature is possibly associated with the dual organization. Finally, it may be noted that while fellow-members of one's clan are "brothers" and "sisters," these terms are not extended to members of the same moiety if of a different clan. The only statement to the contrary which I obtained by its weakness really bears out my point: it was said that members of one moiety were friends, a *kind* of brothers. There is indeed, proof that certain social practices hold for the larger division. For example, I was told that when presents were received by Four-clan people from their clan sons and daughters, they called together all the other members of the moiety and distributed their gifts among them. As shown elsewhere, the joking-relationship likewise extended, at least in some measure, to the children of the moiety members. Nevertheless, in almost all such cases the indications are that we are dealing with an *extension* from the smaller to the larger group. In other instances, a usage is definitely associated with the clan and only the clan. Thus, if a man struck a coup, only members of his own clan rejoiced. Finally the lack of distinctive names for the moieties may be regarded as corroborative testimony. Taken in connection with the various reasons already adduced, it suggests that the moieties developed historically as combinations of several clans.

A clan census was taken with the main purpose of determining what clans had intermarried. The results are the following: —

Joe Packineau, Lower Cap; wife, Arikara.
Skunk, Lower Cap; wife, Arikara.
Juneberry, Lower Cap; husband (dead), Knife.

Otter, Lower Cap; husband (Bad-brave), Knife.
Dancing, Lower Cap; husband (Young-wolf), Mandan Prairie-chicken.
I′tsi kī‘ kic, Lower Cap; unmarried; son of Bad-brave, Knife.
Medicine-crow, Lower Cap; wife, Three-clan moiety, clan not known to informant.
Many-sweet-grasses, Lower Cap; husband (Sand, dead), Mandan Prairie-chicken.
Frank Packineau, Lower Cap; wife, Mandan of clan not known to informant.
Tall-woman, Lower Cap; husband, Standing Rock Agency Dakota.
Hairy-coat, Real Water; wife, Mandan.
Looking-for-water, Prairie-chicken; husband (Crow-arm), Mandan of Three-clan moiety.
Son-of-star, Knife; wife (Buffalo-bird-woman), Prairie-chicken.
Ōokē′ wī‘a (Hair-ornament-woman), maxō′xati clan; husband (Crow-flies-high), awáxe rā′wita; father, Prairie-chicken.
Drags-wolf, Real Water; wife (Prairie-dog-woman), Prairie-chicken.
Spotted-horn (son of Ōī‘okē′ wa), maxōxati; wife (Other-comes-out), Prairie-chicken.
Many-women, Knife; husband (Kidney), awáxe rā′wita.
Old-white-man, maxō′xati; wife, Mandan.
Butterfly, Real Water; wife, Mandan.
Poor-wolf, Real Water; wife, Knife.
Dancing-bull, Prairie-chicken; wife, Mandan.
Fast-dog, maxō′xati; wife, Prairie-chicken.
Spotted-rabbit, awáxe rā′wita; wife, Prairie-chicken.
Hard-horn, awáxe rā′wita; wife, Knife.
James Horn, awáxe rā′wita, wife, Knife.
No-arm, maxō′xati; wife, awáxe rā′wita.
Biscuit, Prairie-chicken; wife, Knife.
Sitting-owl, Knife; wife, awáxe rā′wita.
Foolish-bear, Wide Butte; wife, awáxe rā′wita.
George Elk, Wide Butte; wife, Mandan.
George Blackhawk, Wide Butte; wife, Prairie-chicken.
Bull's-eye, Wide Butte; wife, Mandan Prairie-chicken.
Spotted-wolf, awáxe rā′wita; wife, Prairie-chicken.
Thomas Spotted-wolf, Knife; wife, Three-clan moiety.
Young-bird, Knife; wife, Three-clan moiety.
Yellow-wolf, maxō′xati; wife, Knife.
James Baker, Knife; wife, Mandan.
Lewis Baker, Knife; wife, awáxe rā′wita.
Percy Baker, Knife; wife, Mandan Prairie-chicken.
Willy Hale, maxō′xati; wife, Real Water.
Arthur Mandan, Prairie-chicken.
White-finger-nail, Knife; wife, Mandan.
Coffee, Real Water; wife, Knife.[1]
Francis Charging, Knife; wife, Prairie-chicken.
Bird-bear, awáxe rā′wita; wife, Mandan.
Harry Eaton, Knife; wife, Prairie-chicken.

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[1] The informant was not sure of the clan, but felt certain that Coffee's wife was of the Three-clan moiety.

Little-wolf, Knife; wife, Arikara.
Young-bear, awáxe rā'wita; wife, Dakota.
Front-coyote, awáxe rā'wita; wife, Mandan.
Peter Standish, Three-clan moiety; wife, Mandan.
Walks, Three-clan moiety; wife, Mandan, Prairie-chicken.
Henry Bad-gun, Knife; wife, Knife.
Lean-bear, Knife; wife, Knife.
Robert Lincoln, Prairie-chicken; wife, Knife.
Sam Jones (= Left-hand-bull), Real Water; wife, Mandan Prairie-chicken.
Crow-bull, Real Water; wife, Mandan Prairie-chicken.
Black-mountain-lion, Knife; wife, Prairie-chicken.
Phillip Atkins, Knife; wife, Real Water.
Foolish-wolf, awáxe rā'wita; wife, Arikara.
Holding-eagle, Prairie-chicken; wife, Mandan.
Watkins, Prairie-chicken; unmarried.
William Coghlan, Real Water; unmarried.
Louis His-horse-is-red, Real Water; wife, Wide Butte.
Dan Wolf, Real Water; wife, Dakota.
Good-bear, Real-water; wife, Mandan Prairie-chicken.
Buffalo-paunch, Real Water; wife, awáxe rā'wita.
Wolf-chief, Prairie-chicken; wife, Mandan.
Bear-arm, Knife; wife, Mandan Prairie-chicken.
Old-dog, Three-clan moiety (probably Knife); wife, Mandan Prairie-chicken.
White-duck, Three-clan moiety (probably Knife); wife, Knife.
Stick-face, Prairie-chicken; wife, Mandan.
Rabbit-head, Knife; wife, Knife.
White-face, Knife; wife, Arikara.
Pan, awáxe rā'wita; wife, Lower Cap.
Rabbit-above, Prairie-chicken; wife, Real Water.
Conrad Smith, Prairie-chicken; wife, awáxe rā'wita.
Bears-in-water, Lower Cap; wife, Three-clan moiety (Knife?).
Harry Savings, Knife; wife, Mandan Prairie-chicken.
William Dean, Lower Cap; wife, Arikara.
Stanley Dean, Lower Cap; wife, Three-clan moiety.
Mike Bassett, Real Water; wife, Three-clan moiety.
Big-head, Three-clan moiety; wife, Prairie-chicken.
Old-male-black-bear, awáxe rā'wita; wife, Three-clan moiety.
One-feather, awáxe rā'wita; wife, Wide Butte.
Carl Withman, Three-clan moiety; wife, Mandan.
Sam Newman, Three-clan moiety (because his Arikara mother joined Three-clan moiety); wife, Arikara.
Many-shrines, awáxe rā'wita; husband, (Bear's necklace), Prairie-chicken.
First-squash-blossom, awáxe rā'wita; husband (Bobtail-bull), Knife.
Skunk-woman, Knife; no husband.
Many-woman, Knife; husband (Kidney), awáxe rā'wita.
Marakápec, Knife; husband, Lower Cap.
Woman-bear, Prairie-chicken; husband, Lower Cap.
Buffalo-woman, Prairie-chicken; husband, Knife.
Takes-out, Real Water; husband, Knife.
Cold-medicine, Knife; husband, Knife.

Yellow-top, Real Water; husband, awáxe rā'wita.
His-cherry, Real Water; husband, awáxe rā'wita.
Juneberry, Knife; husband, awáxe rā'wita.
Not-woman, Knife; husband, Mandan.
Different-snake, Knife; husband, (Prairie-chicken), Mandan.
Grows-on-water, Knife; husband, Real Water.
Corn-stalk, Knife; husband (Two-hearts), awáxe rā'wita.
All-blossom, Real-Water; husband, (Black-chest), Mandan.
Woman-in-water, Knife; husband, Mandan.

Of the 153 adult Hidatsa (living and dead) listed above, the clan affiliations are as follows: Prairie-chicken, 26; awáxe rā'wita, 26; Real Water 21; Wide Butte, 6; maxō'xati, 7; Knife, 51; Lower Cap 16. The total for the Four-clan people is accordingly 79, for the Three-clans 74.

In the following table the data bearing on intermarriages of clans are presented, the method adopted being essentially that suggested by Dr. A. A. Goldenweiser.[1] Since the order of the spouses in the preceding list is

	Prairie-chicken	awáxe rā'wita	Real Water	Wide Butte	maxō'-xati	Knife	Lower Cap
Prairie-chicken	0	4	2	1	3	7	5
awáxe rā'wita	4	0	3	2	2	9	1
Real Water	2	3	0	1	1	5	0
Wide Butte	1	2	1	0	0	0	0
maxō'xati	3	2	1	0	0	1	0
Knife	7	9	5	0	1	4	5
Lower Cap	5	1	0	0	0	5	0

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[1] Goldenweiser, 284.

immaterial, the vertical and the horizontal columns ought to give identical figures, which of course implies duplication. That is to say, the number of marriages between, say, the Prairie-chickens and the Real Waters is recorded in the third square of the first horizontal column but also in the third square of the first vertical column, and so forth. Marriages with foreigners have been disregarded, and a zero indicates that no marriage between the two clans in question is on record.

Small as is the total number of marriages recorded, certain interesting facts develop from this tabulation. For one thing, the only cases of non-exogamous unions, four in all, occur in the Knife clan. Secondly, the non-exogamous nature of the moieties is clearly shown. Of the fifty-six marriages recorded, twenty-three took place within the moiety,— thirteen among the Four-clan and ten among the Three-clan people. Each of the clans of the former moiety has intermarried with the three other clans of the same moiety. In the Three-clan moiety there is no record of an intra-moiety marriage between the maxō′xati and Lower Cap clans, but this must be due merely to the small number of maxō′xati people since there is also no case of their intermarrying with the Wide Butte of the complementary division, while an instance occurs of a maxō′xati marrying a Knife. Further, it is important to note that of the five types of union permissible by clan exogamy, but not recorded as having actually occurred, four would be perfectly consistent with exogamous moieties. The simplest explanation of the lacking combinations is that they are absent simply because of the inadequate extent of the series. It can hardly be assumed that the Wide Butte on principle eschewed possible mates from the complementary moiety, while the small number of individuals of that clan (6) sufficiently accounts for the phenomenon. A similar explanation may be offered for the lack of Lower Cap and maxō′xati marriages, there being only seven members of the latter clan in my list. The only case not so obviously interpreted in this way is that of the Real Waters (21) and the Lower Caps (16), but even here the number of individuals is not very great, and the moiety factor being excluded no explanation but chance suggests itself. In short, I believe that in principle the Hidatsa had no objection to marrying into any clan except their own.

TERMS OF RELATIONSHIP.

Morgan rightly insists on the essential similarity between the Hidatsa and Crow kinship systems and gives a fairly accurate exposition of their dominant principles.[1] He deserves special credit for emphasizing two very characteristic traits,— the placing of the cross-cousins into generations different from the speaker's, and the classification of the mother's brother with the elder brother. The Crow and Hidatsa terminologies differ markedly from the ordinary form of classificatory system as found among the Dakota in the complete lack of specific terms for uncle, nephew and niece, and cross-cousins. Thus, there is no distinction between male and female speech in designating the brother's son and daughter, both men and women classifying these with their own children. Morgan errs, however, in his treatment of the paternal aunt relationship. According to him, this aunt is called "grandmother" and correlatively calls her brother's children "grandchild"; though he also mentions a distinct word phonetically corresponding to my *bacā'wi,* he explains that it is restricted to male usage. According to my information, this is incorrect. The word *bacā'wi,* though without a correlative to designate the nephew-niece relationship, is the regular word used by both sexes for the father's sister; and this relative is not addressed as grandmother. This statement is corroborated by Matthews's data (see below). Morgan's error may be due to rationalization from the fact that this aunt's husband is undoubtedly called grandfather.

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[1] Morgan, (a), 188–189.

Other points of disagreement with Morgan will be best considered in connection with the terms themselves.

Matthews's list[1] does not give nearly as many connotations as Morgan's, but is rather accurate so far as it goes and phonetically superior. Matthews makes the mistake of claiming for the Hidatsa system a specific term for maternal uncle, *ita' du* (with third person pronoun). "Maternal uncle" is only one of the meanings this word has; it is applied, as Morgan also notes, to the elder brother (w. sp.), and the essential thing is this classification of the mother's brother with the elder brother. In the Bear-girl myth, e. g., the heroine addresses her elder brothers as *matā'ru.* Matthews therefore further errs in stating that *itame' tsa* is the only term for a woman's elder brother, though he is right in saying that this is a general name for brother or male cousin, i. e., is used by both sexes. According to my informants it may even be applied to sisters, though the stem seems to be simply that for "man."

While clan lines are obliterated by the absence of specific terms for the brother's son and daughter (w. sp.), the clan factor becomes so dominant as to override the generation factor in the designation of cross-cousins, the female descendants through females of the paternal aunt, of the maternal uncle, and of the maternal grandmother's brother. At least, this is the most satisfactory explanation of the empirical facts.

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[1] Matthews, 55–57.

For the sake of clearness I shall, regardless of the necessity of some repetition and arbitrariness, list the Hidatsa terms under the general headings of consanguinity and affinity, and further subdivide according to generations. Where there is no absolute demarcation between terms of consanguinity and affinity, I shall indicate overlapping by bracketing the connotations in point. It should be noted that differences in generation are not distinguished beyond the second ascending and descending generations.

The words are given with the first person pronominal forms, but where the stem differs for other persons these forms are also listed.

Except for the father terms and where a vocative form is precluded by avoidance rules, the vocative and non-vocative stems coincide, but minor alterations are made either by suffixing *c* for the non-vocative or by a change of accent. Thus, màtawapicā′, my grandchild (voc.) becomes *ma‵tawapi′ca;* maku′, my grandmother (voc.) is changed to *maku′c*, and *matu′*, my brother's wife (voc., w. sp.) becomes *matū′c*.

TERMS OF CONSANGUINITY.

Speaker's Generation. In order to avoid unnecessary reiteration, I state at the outset that parallel cousins are brothers and sisters, while cross-cousins, being placed in the parent and child relationship, are not included in the present section. Further, it should be noted that all male clansfolk are brothers, while the female members of one's clan and generation are sisters.

mī‵aka′ (m. sp.). My elder brother, mother's brother, mother's mother's brother, mother's mother's mother's brother.

matsū ka′. My younger brother (m. sp., w. sp.), sister's son, (m. sp.), sister's daughter's son (m. sp.).

matawī′a (m. sp.). My elder sister.

màta ‘kī ica′ (m. sp.). My younger sister, sister's daughter.

matā′ru (w. sp.). My elder brother, mother's brother, mother's mother's brother.

marū′u (w. sp.). My elder sister.

matā‵ku′ (w. sp.). My younger sister.

matawa′ tsa. My brother or sister,[1] regardless of relative age; members of one's clan are designated by this term.

maku′tsati. My father's clansman's child (see p. 42). (Father's clansmen's children may be addressed as brothers and sisters).

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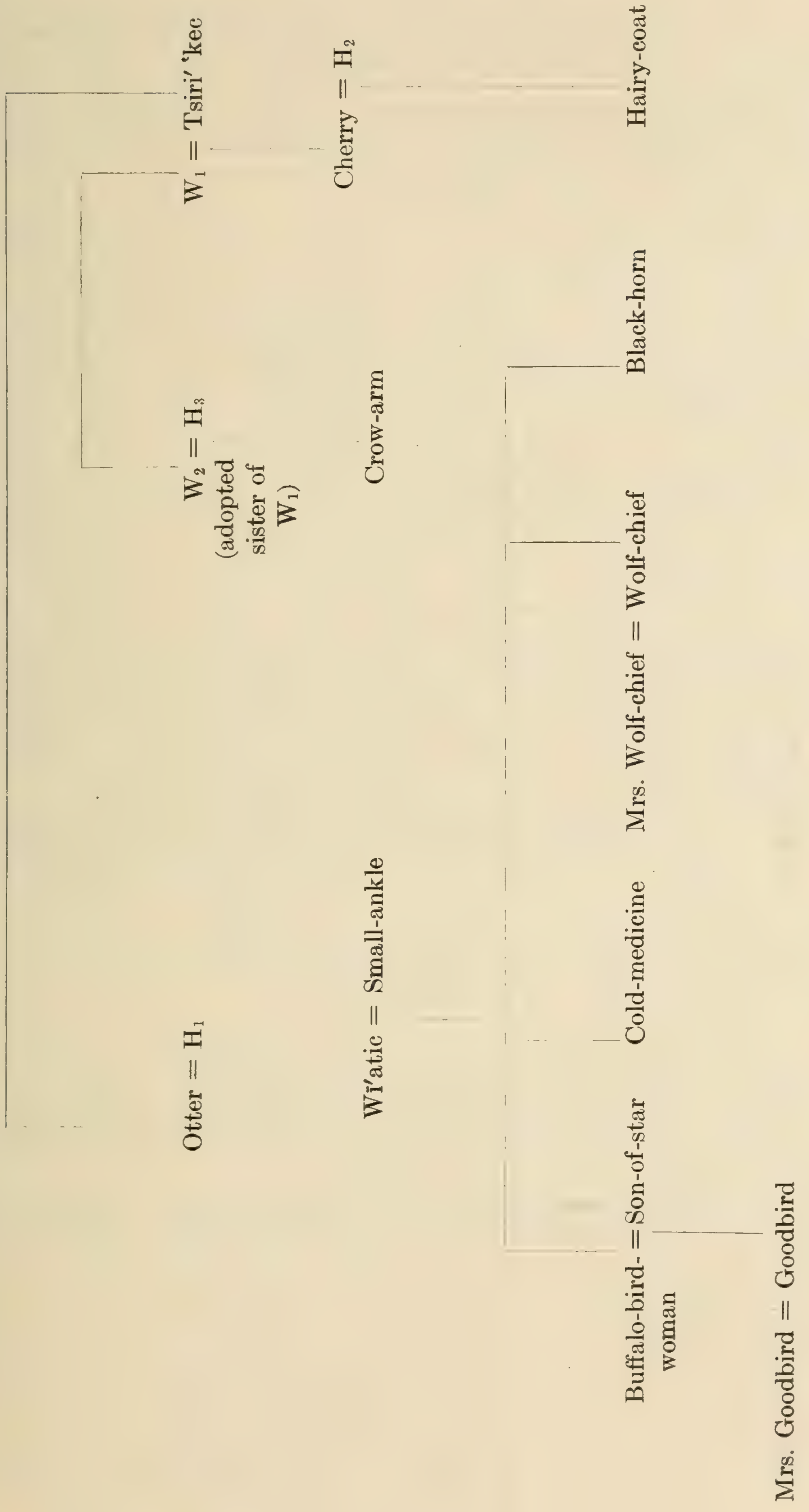
[1] As noted above, the stem seems to be that for "man."



Genealogical Table 1

In addition to the above may be listed *màta wa + iʽtía,* which was given as an alternative for mīʽ akaʹ. The word is readily analyzed into *maʽta,* first person possessive pronoun; *wa,* one who; *iʽtiaʹ*, big, old (here with comparative meaning, that is, my big (old) one. Brothers and sisters by the same father and mother might be called collectively *makitawaʹtsikāʽti, makiīʹ rukạ̄ʽ tats,* or *makiʹ xuakāʽ tats.*

matawīʹa is obviously derived from *mīʹa,* woman, the *m* being changed to *w* in intervocalic position.

It is obvious that the nomenclature for brothers and sisters distinguishing relative seniority is rather full, seven out of eight possible concepts being represented; only for the younger brother is there a term common to male and female speech. Mandan is poorer by two terms, that for younger brother (m. sp., w. sp.) being also applied to the elder brother by women, while the men do not differentiate elder and younger sisters. Morgan gives only six Hidatsa terms, merging the women's with the men's word for younger sister; but *matāʽkuʹ* is certainly correct for the former and is listed by Matthews.

Buffalo-bird-woman (see table, p. 29) calls Wolf-chief *matsūʽkaʹ*, and he calls her *matawīʹa;* she called her deceased elder brother Black-horn *matāʹru* and was called in turn *màtaʽkī icá.*

Buffalo-bird-woman called her younger sister, Cold-medicine, *matāʽkú,* and was called *marūʹ.*

Cold-medicine's children would have been Good-bird's brothers and sisters.

Wolf-chief calls White-owl *matsūʽkaʹ* because they are fellow-clansmen.

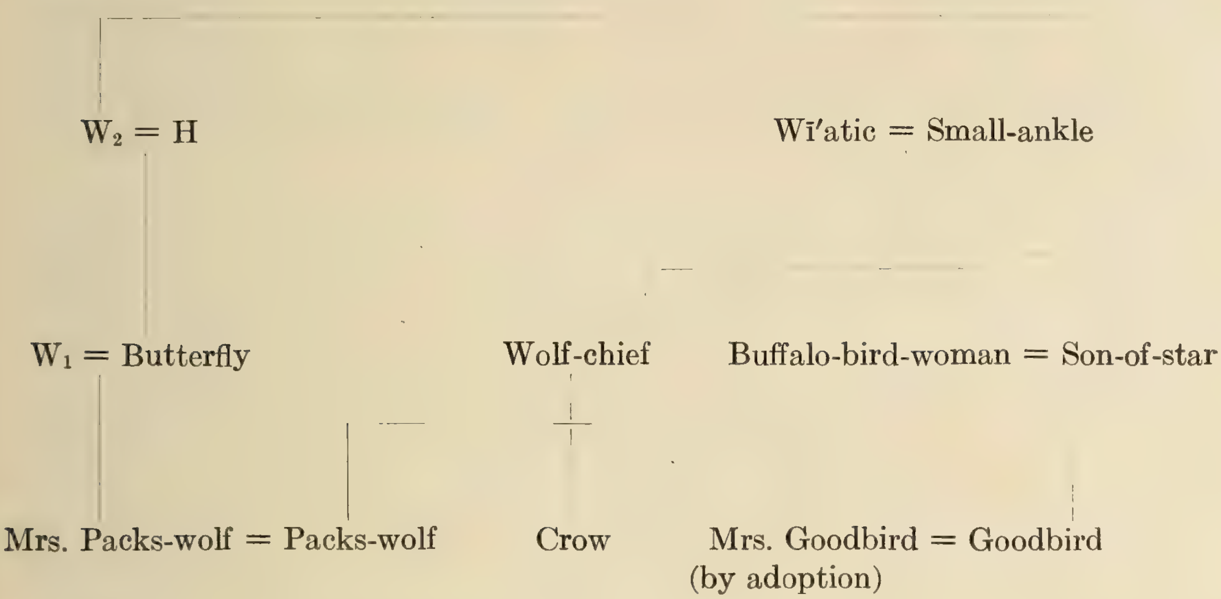
Son-of-a-star's brother's children are Goodbird's brothers and sisters.

The unusual confusion of generations indicated by the meanings listed above was checked by genealogical data.

Goodbird calls Wolf-chief and Tsiriʹ ʽkec *mīʽ aká* and they call him *matsūʽká;* the latter is addressed *matāʹru* by Wīʹatic and Buffalo-bird-woman. Tsiriʹʽkec is also elder brother to Wolf-chief. If Buffalo-bird-woman had any daughters or daughter's daughters, all of these would address Tsiriʹ ʽkec as *matāʹru,* elder brother, and he would call them *màta ʽkīicaʹ*, younger sister.

Butterfly's children (table, p. 31) are Buffalo-bird-woman's brothers and sisters for they are the children of her father's sister's son, i. e., of her "father" (see below).

Genealogical Table 2



First Ascending Generation. tatē′ (voc.). My father, father's brother or clansman, hence father's mother's brother, and father's sister's son, [mother's sister's husband].

mā′tuc (non-voc.). Coextensive with above; 3d person, *aruwā′tu.*

tati′c (non-voc.). Also coextensive with above.

itā′ ‘kaxiɛ‘. My father, father's clansman (optional), [father-in-law].

i‘ka′. My mother, mother's sister, [father's brother's wife].

ihū′c. His mother, etc.

bacā′ wi. Father's sister or her clanswoman of the same generation, father's sister's daughter, father's sister's daughter's daughter, and all other female descendants through females *ad infinitum.*

The poverty of Hidatsa terminology in this generation is noteworthy, not only as regards the absence of uncles, but also in point of specific terms for the sexes and as regards differentiation of vocative and non-vocative.

Both Buffalo-bird-woman and Wolf-chief called Small-ankle *tatē′.*

Morgan incorrectly classes the father's sister's daughter with the mother and her husband with the father; since the father's sister's daughter is classed with the paternal aunt, her husband is logically classed with this aunt's husband, i. e., as a grandfather (see below). His error in classing the father's sister's daughter with the mother is presumably a consequence of his mistake concerning the father's sister.

Tsiri′ ‘kec (see table, p. 29) would be called *tatē′* by Goodbird's children, because he is Goodbird's mother's mother's mother's brother, i. e., his "brother" and thus stands to them in the relationship of a father's brother.

Wolf-chief, about sixty-five years of age, actually addressed male members of his father's clan as "father" even if they were little boys.

Crow-arm (see table, p. 29) calls Tsiri′ ʻkec father, because the latter stands to him in the relationship of mother's (adopted) sister's husband. But Tsiri′ ʻkec is regarded as an elder brother by Goodbird, Wolf-chief and Buffalo-bird-woman for reasons previously given. Hence Crow-arm is treated by all three as a brother's son, i. e., is called "son" and addresses the two men as "father." This is not mere rationalization but the actual mode of address. My interpreter Goodbird told me he had never known before my inquiries why Crow-arm, who is about seventy-five years of age, called him father.

Butterfly (table, p. 31) is Buffalo-bird-woman's father because he is her father's sister's son. For the same reason Ben Benson's son is Goodbird's father (table, p. 32), and Goodbird is called father by Wolf-chief's son. Benson's daughter, Leaf, and Leaf's daughter are called *bacā′wi* by Goodbird.

Butterfly's daughter, Mrs. Packs-wolf, is Buffalo-bird-woman's sister and therefore "mother" to Goodbird; her children are Buffalo-bird-woman's children and Goodbird's brothers and sisters. Butterfly's son, however, would be Goodbird's *brother*, for he would be Goodbird's mother's father's sister's son's son = mother's father's son = mother's brother = brother.

Wolf-chief's son calls Buffalo-bird-woman *bacā′wi*. Wolf-chief's daughter would call Buffalo-bird-woman's daughter, i. e., her father's sister's daughter *bacā′wi*.

Goodbird's children, male and female, would call Tsiri′ ʻkec *tatē′*.

Wolf-chief's children call Goodbird "father."

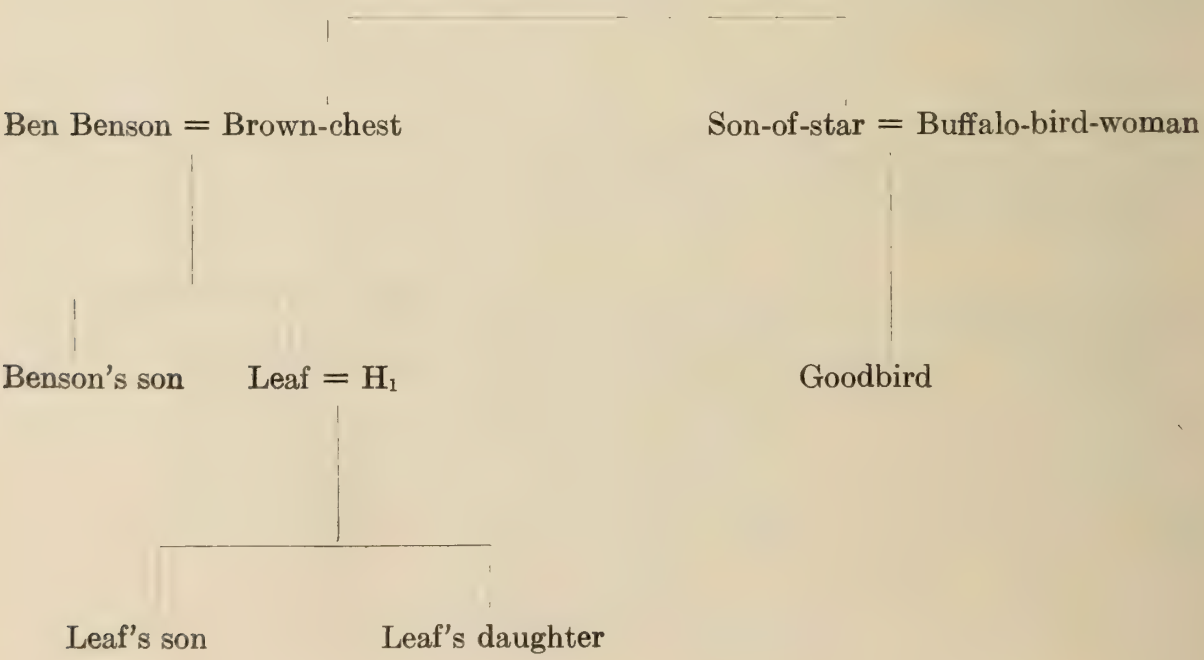
Packs-wolf and all of Good-bird's clan sons (i. e., clansmen's sons) call him *itʻā′kaxiʻ*ϵ, literally, "old man"; tatē′ would be equally correct.

Goodbird called Cold-medicine *iʻka′*.

When a clan-father is younger than the speaker, he may be called *mā′tuo kari′cta*, i. e., young (or small) father.

Son-of-a-star's sister's daughters are addressed by Goodbird as *bacā′wi* and her sons as *tatē′*.

Genealogical Table 3



Second Ascending Generation. mā\` rut‘a‘ka′. My grandfather (m. sp., w. sp.), grandfather's brother (m. sp., w. sp.), [father-in-law, w. sp.], [father's sister's husband, m. sp., w. sp.], [grandfather's sister's husband], [husband's sister's husband].

maku′. My grandmother (m. sp., w. sp.), grandmother's sister (m. sp., w. sp.), [mother-in-law, w. sp.], [grandfather's brother's wife (m. sp., w. sp.)].

Morgan's error as regards the use of the grandmother term for the father's sister has already been noted. He is also mistaken in classing the mother's mother's brother with the grandfather; as explained in an earlier section, this kinsman is called elder brother.

The classification of the father's sister's husband with the grandfather is one point of difference from the Crow system. According to Morgan's schedules, this Hidatsa feature is shared only by unrelated tribes, viz., the Choctaw, Chickasaw, Creek, and Pawnee.[1]

Ben Benson (table, p. 32) is Goodbird's father's sister's husband, hence is called grandfather.

Logical inferences from peculiarities of nomenclature previously noted result in astonishing anomalies. Thus, Hairy-coat (see table, p. 32), though about seventy, actually addresses Goodbird, about forty-five, as "grandfather." The reason is that his real grandfather, Tsiri′‘kec, being Goodbird's mother's mother's mother's brother becomes Goodbird's elder brother, whence the conclusion that Goodbird is a grandfather's brother and accordingly, a grandfather. For a similar reason Hairy-coat addresses Buffalo-bird-woman, his grandfather's "sister," as grandmother, and the same word is applied to her by his brothers and children.

Butterfly is Goodbird's grandfather because for reasons given in the preceding section he is Goodbird's mother's "father."

Small-ankle's brothers are Goodbird's grandfathers; his sisters are Goodbird's and Goodbird's children's grandmothers. Small-ankle's sister's husbands are Goodbird's grandfathers, Small-ankle's brother's wife is Goodbird's grandmother.

Son-of-a-star's paternal aunt is Goodbird's grandmother; his paternal uncle is Goodbird's grandfather.

First Descending Generation. marica′. My son, brother's son or clan brother's son, mother's brother's son, sister's son (this last meaning only for w. sp.).

batsɛ′cie. My clan son, also used in addressing any young man of unknown relationship.

ma ‘ka′. My daughter, brother's daughter, mother's brother's daughter, sister's daughter (this last meaning only for w. sp.).

ma\`tawakari′cta. My child (literally, my little one).

One anomaly that particularly requires genealogical confirmation here is the lack of a nephew and niece term correlative with *bacā′wi*. The correctness of the meanings given is shown by the fact that Buffalo-bird-woman calls Wolf-chief's son *maricá* and his daughter *ma‘ká* as though they were her own children, while in turn she is addressed *bacā′wi.*

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[1] Morgan, (a), 322.

Goodbird calls Wolf-chief's children *maricá* and *ma ‘ka′*.

Cold-medicine called Goodbird, her sister's son, *marica′*.

Second Descending Generation. ma‵tawapicā′. My grandchild, my brother's grandchild, [wife's brother's son].

It has already been pointed out (p. 33) that the mother's mother's brother's (or even the mother's mother's mother's brother's) daughter's son is classed with the grandchild.

Consistently with his remarks on the designation of the father's sister, Morgan classifies the woman's brother's child with the grandchild. As shown in the preceding section, a woman classifies her brother's children with her own. Morgan further errs in stating that a man classifies his sister's grandchild with his own; this is impossible since his sister's children are called his brothers and sisters.

Buffalo-bird-woman calls any one of Goodbird's children, male or female, *màtawapicā′*.

Terms of Affinity.

Speaker's Generation. mā‵ kira′c (non-voc.). My husband, provided I have never been married before.

ma‵taruwi′a (non-voc.). My wife, provided she has never been married before. (The last two syllables form the usual word for "woman").

ma‵taruwatsϵc. My husband, if I have been married before. (The last two syllables form the usual word for "man.")

ϵ′ raha (non-voc.). My spouse.

u′a. His wife.

There is considerable complexity in the nomenclature of spouses and their brothers or sisters, and the definitions given must be supplemented by the following data. A man may call his wife by name, but a woman must not call her husband by name though the words forming it are not taboo to her. Spouses call each other *hi′rϵ* or *hari′ ‘ku,* which words are not so much terms of kinship as demonstrative interjections meaning "that fellow" or "that woman." If the wife has not been married before, her husband may call her *hi′rϵ ma‵taruwi′a.* If the woman had been previously married, the husband's joking-relatives would object to his using the latter expression with respect to her.

Teknonymy may be used non-vocatively by both spouses if the wife has been married before. The woman is then spoken of as *marā′ka ihu′c,* my child's mother, and the man either by a corresponding phrase or with the name of the child substituted.

I have no instance of *u'a* compounded with the first person pronoun though this combination occurs with the same root in the word for brother's wife (see below). Instead of *u'a* may be used the third person form of *ma'taruwi'a* (with the restriction of meaning already noted).

Of several women in a polygamous household, each not previously married might refer to her husband as *mā' kirā'c.*

A man calls his wife's sister as he does his own wife, viz., *hi'rɛ* or *ha'riwa'ku* (apparently a variation of *hari' 'ku*), or by name. Non-vocatively he uses a descriptive phrase, e. g., *ma'taruwi'ac itā' kuc,* my wife's younger sister. When a man has taken to wife first the elder and then the younger of two sisters, the latter is referred to as *i'taruwi'a kari'ctac,* "his young wife." Goodbird calls his wife's elder sister by name, other people refer to her as *u'a i'ti 'ac,* "his wife's elder one"; he calls his wife's younger sister by name, while other people refer to her as *itaruwi'ac,* "his wife."

A woman thinks of her sister's husband as her own, but calls him *batsɛ',* "man"; non-vocatively she uses a descriptive phrase, e. g., *marū'c kirā'c,* "my elder sister's husband."

This last expression is given by Morgan for the father's brother's daughter's husband (w. sp.); this is of course correct provided the speaker is younger than her female cousin. Morgan's *ma-ensh-ke-rash* for the sister's husband (w. sp.) is probably merely a typographical error.

A woman calls her husband's brother *hi' rɛ;* the corresponding non-vocative form is given below.

iri'kuɛ ts is used for a fellow-wife, presumably only if not a sister.

In jest a man may call his wife's brother his wife.

Small-ankle had four wives and called each of them by name, referring to them as *mataruwi'ac.* Each wife referred to him as *mā'kira'c.*

The remaining terms of affinity in this generation are as follows: —

bu' aka' (m. sp.)	My brother's wife.
marā'ti' (m. sp.).	My wife's brother, sister's husband.
maci' kicəc (non-voc.).	My husband's brother.
matu' (w. sp.).	My brother's wife, my husband's sister.

Morgan rightly extends the meaning of *bu'aka* to cover the wives of relatives classed with the brother, viz., the father's brother's son, mother's sister's son, and mother's brother; he is mistaken in also translating the word "husband's brother," for which a specific term is given in my list. *bu'aka,* both in Hidatsa and Crow, is clearly derived from *u'a,* wife, (*bu'a,* my wife). *marā 'ti'* is correctly given by Morgan as applying to the husband of the father's brother's and mother's sister's daughter. Of *matu'* he also extends the connotation correctly to the wives of the parallel cousins.

Buffalo-bird-woman calls Wolf-chief's wife *matu'* and is so called by her sister-in-law.

First Ascending Generation. mā‵ rut‘a‘ka′. My father-in-law (w. sp.); husband's sister's husband (w. sp.); father's sister's husband, (m. sp., w. sp.); [grandfather, m. sp., w. sp.].

maku′. My mother-in-law (w. sp.); my sister's mother-in-law (w. sp.); [my grandmother, m. sp., w. sp.].

Since the parent-in-law taboo is observed by the Hidatsa, neither the wife's father nor her mother was normally addressed. The regulation as to the former was, however, less strict and when it was relaxed the son-in-law might use the vocative form *it‘ā′kaxiϵ′*, "old man." Non-vocatively he uses another form of the same stem, *ma‵ta it‘ā′ ‘ka.* The mother-in-law is non-vocatively referred to as *mat‘ut‘a′ka;* this term also includes all those the wife calls mother, grandmother, and *bacā′wi.*

I find no warrant whatsoever for Morgan's term *mä-nä-tish,* which he translates "husband's father, wife's father." Phonetically his word resembles that for brother-in-law (m. sp.).

I have collected various instances of the use of *mā‵ rut‘a‘ka′.* Thus, Wolf-chief's son's wife would so call Goodbird, her husband's father's sister's son = husband's "father." If Small-ankle were still living, Wolf-chief's wife would address him as *mā‵rut‘a‘ka′* and he would call her *mat‘ū ka′.*

Morgan defines his equivalent of my *mat‘ut‘a′ka* to mean both wife's mother and husband's mother. According to my data, only the former is correct. If Small-ankle's wife were living, Mrs. Wolf-chief would call her *makú.*

Wolf-chief's daughter's husband would refer to Goodbird, i. e., his wife's father's sister's son, as *itā′ ‘kaxiϵ′.*

Wolf-chief's son's wife would call Goodbird, i. e., her husband's father's sister's son, *mā‵ ruta ‘ka′,* the same word which would be used by Wolf-chief's daughter's child.

Goodbird is called *mā‵ ruta‘ka′* by his wife's brother's wife.

Goodbird's wife and all her sisters call Buffalo-bird-woman, *makú.*

If Small-ankle's wife were living, Wolf-chief's wife would call her *makú.*

Goodbird classes with his father-in-law his wife's father's brothers, both her grandfathers and all their brothers, her father's sister's sons and her other father's clansmen, Mrs. Goodbird's grandmother and their sisters, her mother's sisters, her father's own and clan sisters are all Goodbird's mothers-in-law.

First Descending Generation. mat ‘ū‵ ka′. My daughter-in-law, wife's brother's wife, mother's brother's son's wife.

The son-in-law is not addressed directly on account of the avoidance rule. Non-vocatively he may be referred to in several ways, of which *nō‵ hā′ kac* is probably the most common; qualified by the word for woman, *nō‵ hā′ kac wi‵a,* it is sometimes applied to the daughter-in-law instead of the word given above. Another word for the daughter's husband is *matu′ti. marā‵ka′*, "my child" and *ma ‘ka′ kirā′c,* "my daughter's husband," are likewise used in referring to him.

According to Morgan, men class the sister's son's wife with the daughter, addressing her *ma‘ka′*. Though I have no note on this relationship, this seems inconsistent with other connotations. Since the sister's son is classed with the younger brother, his wife would properly be a brother's wife, i. e., addressed as *bu aka′*.

As Morgan notes, the term *mat ū‵ ka′* is applied to the wife of the brother's son (m. sp.) and of the sister's son (w. sp.). For son-in-law Morgan only gives the phonetic equivalent of my *matu′ti*. He is right in including under this head the mother's brother's daughter's husband.

Morgan gives *me-nä* for sister's daughter's husband (m. sp.). I did not obtain this word and think it must be an error; the sister's daughter being a "sister," her husband would be a "brother-in-law."

Another term found in Morgan's schedules is *mat-to′-we-ä-kä-zhe*, "brother's son's wife" (w. sp.). Since the brother's son is classed with the son, his wife would naturally be called by the usual word for daughter-in-law.

If Wolf-chief's daughter married, her husband would be referred to by Goodbird as *nō‵haka′*, *matu′ti* or *marā‵ka′*. If Wolf-chief's son married, his wife would be called *mat ‘ū‵ka′* by Goodbird.

If Small-ankle's wife were living, she would call Mrs. Wolf-chief *mat ‘ū‵ ka′*.

Son-of-star was Small-ankle's real son-in-law. Small-ankle would also have classed with Son-of-star the husbands of Buffalo-bird-woman's daughters, and of her daughters' daughters, whom of course Buffalo-bird-woman would also regard as sons-in-law. Good-bird's wife is Small-ankle's daughter-in-law; Wolf-chief's daughter's husband is Buffalo-bird-woman's son-in-law; Goodbird's daughter's husband would stand in this relationship to both Goodbird and Buffalo-bird-woman.

One of the most interesting features of the Hidatsa kinship system is the fact that the same individuals may stand to each other in two or more relationships. The concrete cases are too few to permit generalization as to the preferential use of one of the possible terms in actual practice, and I must accordingly content myself with describing the facts.

For reasons previously set forth Hairy-coat is Buffalo-bird-woman's "grandchild." But he is also a member of the same clan as Buffalo-bird-woman's father, hence he is her "father." According to my informants, both appellations might have been used, but as a matter of fact Buffalo-bird-woman and her brother Wolf-chief only called Hairy-coat "father" when they received a sacred bundle object from him.

Still more instructive are the relations between Packs-wolf and Goodbird. From diagram 2, it appears that Packs-wolf is Goodbird's mother's father's sister's son's daughter's husband = mother's father's daughter's husband = mother's sister's husband = father. On the other hand, Packs-wolf's father was a member of Goodbird's clan, whence the relationship would be reversed, Goodbird becoming Packs-wolf's father. But this is not all. Mrs. Goodbird's sister adopted Packs-wolf's brother, Crow-not-knowing, as her brother, whence Mrs. Goodbird likewise became sister to Crow-not-knowing, all his brothers simultaneously becoming her brothers as well.

Thus, Packs-wolf is a brother of Goodbird's wife and accordingly Goodbird's brother-in-law. As a matter of fact, Goodbird never called Packs-wolf *tatē′* but *batsɛ′ ɛc* or *batsɛ′ ɛcia‵* because of the clan relationship, which thus took precedence here but for some reasons not in the case of Hairy-coat. Packs-wolf called Goodbird *tatē′*, but they might treat each other as brothers-in-law and Mrs. Packs-wolf in speaking to Goodbird about her husband would say, "*nā′ atu di′ rati ē′raha,* "your father your brother-in-law my spouse."

Son-of-star was Goodbird's own father. On the other hand, Goodbird was Son-of-star's father because Goodbird is of the Prairie-chicken clan to which Son-of-star's own father belonged. Goodbird never actually called his father "son"; he was, however, entitled to his share when Son-of-star gave presents to his clan fathers (see p. 40).

Poor-wolf belonged to the same clan as Buffalo-bird-woman's father, and she belongs to Poor-wolf's father's clan. Accordingly, he was both her clan father and also her clan son. Actually, she only called him "father." This may have been due either to his age or to his functioning as a ceremonial father towards her.

With reference to Small-ankle's wife (Buffalo-bird-woman's mother), Poor-wolf also stood in a dual relationship. Since she was wife to a clan brother he might have viewed her as a sister-in-law; actually he never called her *buaka′* but addressed her as *bacā′wi* since she was one of his father's clanswomen.

Buffalo-bird-woman looked upon Cherry-necklace as her brother-in-law because her brother, Painted-yellow, was his brother-in-law. But when another brother, Bear's-necklace, married Cherry-necklace's daughter, Buffalo-bird-woman henceforth regarded him as her father-in-law. In such cases, my informant explained, the relationship of father-in-law takes precedence and thereafter she would not joke with Cherry-necklace any more.

KINSHIP USAGES.

Brother and Sister. As among the Crow, it was not considered proper that an adult brother and sister should hold long conversations together. "If I am married," said Buffalo-bird-woman, "and Wolf-chief visits me with his wife, he talks with my husband and I talk with his wife. If he should come to my house when I am alone, we should settle any business or say anything special we may have to say to each other and then he would leave."

This in no way interferes with their sentiments. "I love Wolf-chief," said the same informant, "and he loves me. I have nothing against him in my heart." She always tries to help him and vice versa. When she was little, she took care of him. If he did anything wrong, she scolded him, and if she did anything out of the way she was scolded by him. Until she was ten years of age, they slept together, but later they slept separately and from that time on only spoke to each other when necessary.

Black-horn gave Buffalo-bird-woman many horses, while she gave presents to his wife.

A woman would tan her brother's robes and prepare meals for him. He would exhort his sister not to do anything bad. Neither will say anything suggestive of obscenity in the other's presence.

When there is a dance at which presents are distributed, a sister will ask her brother to give away her own horses. On one occasion Buffalo-bird-woman's brothers thus disposed of seven of her horses.

Brothers; Mother's Brothers. An elder brother is the proper person to punish his junior, and when the latter is old enough his senior exhorts him to seek visions, to go to war and earn honor marks, etc.

The relations between a mother's brother and a sister's son (m. sp.) are said to be consistent with the terminological peculiarities noted in a previous section. Wolf-chief treats Goodbird as a younger brother and says his feelings towards him are the same as they were towards Changing-enemy, his deceased younger brother.

Sisters. Sisters work together and help each other. Normally, when a younger sister grew up to maturity, she was also married by her elder sister's husband (see p. 46).

Cousins. Buffalo-bird-woman laughed outright at the query whether Goodbird might marry Wolf-chief's daughter, i. e., his maternal uncle's daughter, whom he calls "daughter." The idea of a man marrying his daughter! It would be the same as though he were marrying his own child. She had never heard of such a case. People would regard such a married couple as dogs.

After the above, it hardly requires special statement that marriage between parallel cousins was also tabooed.

Parents and Children. One of the points in which the Hidatsa differ sharply from the Crow is in the more systematic character of their thinking and acting. Thus, I get the impression that in the education of children the Crow allowed their boys and girls to pick up many things by mere observation which the Hidatsa taught by definite instruction. This is strikingly true in the sphere of religion, where a father would point out to his son each progressive step in the way of sacrifice and prayer which it was proper for him to take.

This leads to a sociologically important point. Among the Hidatsa ceremonialism is highly developed, particularly in connection with certain sacred bundles ("shrines," as Doctor Gilbert L. Wilson calls them). Now, while descent in the clan is strictly matrilineal, as already shown, property rights to the sacred bundles are transmitted exclusively in the paternal line, the method being for children to buy each ceremonial privilege jointly from their own father. It is worth emphasizing that a man does not sell these ceremonial prerogatives to his brother's sons but only to his own, though both types of relatives are classed together in the native kinship nomenclature. In the matter of ceremonial transmission the Hidatsa thus differ strikingly from the Hopi, another matrilineal tribe, among whom ceremonial offices usually descend from maternal uncle to sister's son or from elder to younger brother.

Children are not beaten by their parents. So far as corporal punishment was used at all, it was administered by an elder brother and not so much by blows as by immersion in the Missouri. I have one note, however, to the effect that a mother might punish her own but not her sister's children unless she had adopted them; probably my informant had in mind some mild form of correction.

Until the age of about ten little girls might sleep in the same bed with their fathers; after that they would not do so any more.

Father's Clan. In general, it may be said that the father's clansfolk are preëminently the people entitled to receive gifts whenever a proper occasion arises. Possibly connected with this notion is the Hidatsa custom of securing ceremonial articles and privileges from a clan father, who would then be fed for his services. This feature is very prominent in the purchase of membership in the age-societies: men select clan-fathers for their ceremonial "fathers," women clan aunts for their ceremonial "mothers."[1] Funerals were always conducted by members of the clan of the dead person's father. A clan father was always honored by his clan sons and in return he would never reprove them but treated them with kindness.

During a dance Wolf-chief would give presents of calico and blankets or even of horses to his clan aunts. He excelled all his clansmen in the generosity he displayed towards their fathers' clansfolk. Before going to war, he once asked a clan-father to paint his face and put a medicine feather on his head. In the ensuing fight my informant shot and struck an enemy, so he saw that his clan-father had the power to help him. Whenever he had good luck in the chase, he would call in his clan-fathers to give them a feast; and he still invites them when he has anything good to eat. On the other hand, the clan fathers sometimes called Wolf-chief to give him the best of their food. They would also pray to their medicine bundles on his behalf, saying, "This is my son, try to help him."

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[1] Lowie, (d), 225–228.

Buffalo-bird-woman said she tried to give suitable presents to her brother's son and he would give her presents whenever he thought of it but not from any feeling that a return gift must be made.

Father's clansmen were also prominently associated with an individual's names. When a young man had performed a creditable war exploit he would assume some clan father's name, paying its owner for it. The clan father would publicly announce the fact and for a while use his boyhood name until he acquired a new one. Women did not buy new names in this manner, but with men it seems to have been a very common practice under any circumstances. Thus Small-ankle sold one of his names, Spotted-wolf, to a clan son. A man was at liberty to dispose not only of his own name in this way, but also of that of any one of his clansmen. For example, Butterfly gave one of Small-ankle's names Axparā′axic, to their clan son, Hunts-the-enemy; it would not matter in such a case whether Small-ankle were living or dead. When Wolf-chief had struck a coup, his clan-fathers would call him by the name of some famous deceased warrior belonging to their clan; in return my informant gave them horses and property. Wolf-chief's clan-fathers were very kind to him, giving him many names, for which he was envied by his fellow-clansmen. Sometimes these offered to buy some of them, but he refused.

On one occasion Wolf-chief received a name by way of indemnification. When in St. Paul he asked for medicine (whiskey?) in a drug store and received a big bottle, which he put into his bag. On his return, a father's clansman stole it and put back the empty bottle. Wolf-chief said to his clan-fathers, "Well, fathers, some white man must have stolen this bottle." They replied, "Well, son, we'll give you a good name and you will not have to pay for it." Since then he has received many names from them.

A highly characteristic practice shared with the Crow is that of bestowing a nickname derived from an action or peculiarity not connected with the person named but with a member of his father's clan.[1] If a man made some such statement as "My face is Mandan," one of his clansmen might come to one of their clan sons and call him "Mandan-face." Or if a man said to a fellow-clansman, "I have plenty of spotted horses," the latter might call in one of their clan sons and say, "Your name shall be Many-spotted-horses." To take an actual case. A few days before an interview with Wolf-chief, a boy about ten years old entered his store and said, "Well, son,

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[1] Lowie, (c), 202, 216.

I have a good name for you,— Packs-iron." He was a member of the Real Water clan to which Wolf-chief's father had belonged and another Real Water was carrying about a lump of iron with which to massage his back, whence the name. The boy said, "I want some candy because I gave you a good name," and Wolf-chief gladly gave him some. On another occasion a clan-father came to Wolf-chief and said, "Son, I want to get some dinner, give me a large can of strawberries, a pear, and some crackers. I want to give you a very good name this time." Wolf-chief brought in what his "father" had asked for, the latter ate some of the food and took along the rest, and before leaving he spoke as follows: "My hip is sore and I am pretty lame. I'll give you the name of Sore-hip, if I do not give you the name, some one else will." Wolf-chief has received many names on account of Butterfly's actions, hence he always treats Butterfly with consideration.

Grandparents. Grandparents on both sides love their grandchildren but, oddly enough for a tribe with matrilineal organization, one informant declared that the children belonged more particularly to the father's parents, who took care of them and took them to bed with them. However, according to another statement orphans are cared for by the maternal grandmother.

According to Buffalo-bird-woman, grandmothers and grandchildren through adoption were on a footing of mutual raillery. Thus, her son's wife adopted as her son Rufus, the child of her mother's half-sister's daughter. Buffalo-bird-woman will tell Rufus to make haste and marry "because if you don't get a wife soon, your girl will soon get old." On the other hand when she asked for a looking-glass, Rufus said, "Don't let her have it, she wants to send the reflection to an old man she loves."

JOKING-RELATIVES.

As among the Crow,[1] individuals whose fathers belonged to the same clan were "joking-relatives" (*maku'tsatsi*). The basic notion of this relationship in its more serious aspects seems to be that of licensed and unrestricted criticism for an infraction of tribal custom. When a man had committed some reprehensible or improper deed, e. g., married a clan mate, or shown jealousy, it was not the function of his fellow-clansmen but of his *maku'tsati* to reprove him or make fun of him. They would spread the news of the wrongdoing and throw it in the offender's teeth and he was obliged to take all this in good part as the prerogative of *maku'tsati*.

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[1] Lowie, (c), 204 et seq.

These practices began even in childhood. A girl would reproach another for not knowing how to build an earth-lodge, while one boy would say to another, "I have some honor marks, you have nothing." Sometimes *maku′tsati* played against each other in games.

Joking-relatives addressed one another as brothers and sisters. According to Buffalo-bird-woman, they gave one another presents; for example, Sitting-owl, whom she called younger brother, gave her horses. If a man is wounded in battle, his *maku′tsati* is expected to dismount and save him, otherwise he will get the reputation of a coward.

If a woman had been honorably bought in marriage while her *maku′tsati* had merely eloped with her sweetheart, the former would twit the latter with this difference, saying, "You are a bad woman, no one knows where you sleep with this man, no one knows who your first husband was," or, "You are bad, I am a good woman for I have been bought." If a woman is expert at porcupine quillwork and her *maku′tsati* is not, the former will scoff at the other for her ignorance, saying, *di watski′wits,* "I sew you up," which is the word applied to the sewing up at the end of a piece of quill-work. Similarly, if one woman has done a great deal of tanning, she will make fun of another of inferior skill by saying, "I scrape your back."

Among male fellow-jokers certain peculiar usages were in vogue. A man who has scalped a slain enemy has the right of cutting a *maku′tsati*'s hair, provided the latter has no like feat to his credit or has performed it less frequently. In such a case the hair-cutter pays a horse to his joking-relative. Sometimes the one whose hair is threatened will say, "Give me your wife," then the joker desists, for otherwise he would have to surrender his wife. One who has struck an enemy may whip his *maku′tsati,* always granting that the latter has not done likewise. Hairy-coat said that since he had performed this greatest of war deeds he was exempt from having his hair cut and might knock down with his pipe any one attempting to cut it.

Wolf-chief said that one who has struck an enemy, if angry at his joking-relative, may strike him, prefacing the act with the statement, "Over there I struck an enemy." One who had taken a scalp and cut off his *maku′tsati*'s hair would say,

"batsɛ′ hiri‘ kā′ tsiwa a′ra waru′ ‘tsic."
"A man of this size his hair I got."

Then he summoned his father's clansfolk, saying, "My fathers (or aunts), come and bury this enemy I have killed, and receive one of my horses." Some clan father or aunt would then come and give a blanket to the man whose hair had been cut. Before the hair-cutting, the man who is to suffer the indignity designates a horse belonging to his fellow-joker and says, "That's the one you will pay me, and you will give up your wife too."

The other replies, "I'll give you a horse." The one whose hair was to have been cut then takes a stick, strikes his *maku′tsati* and says, "I am using your honor mark because you love your horse and your wife." Then he pays a horse to the man struck. All the other *maku′tsati* deride the one who was afraid to lose his wife and his horse. They say, "Everyone urinates on him, he is no good, he loves his wife. If anyone took her away, I am sure he would try to recover her." This alludes to the very fundamental notion that a man of standing must not be jealous. If his *maku′tsati* asked him for his wife, he was supposed to give her up, or they would jeer him all his life. If he should give her up and take her back again after a few days, he likewise became a laughing-stock.

The relations between male and female fellow-jokers are illustrated by some of Wolf-chief's experiences. When he was a young man, Corn-stalk and Many-women made fun of him. Both of them had made tipi decorations, which accomplishment corresponds to a man's honor marks, while my informant had not yet struck the enemy as first-coup man. Corn-stalk sent him a message, saying "I have finished my tent now and want to pitch it. Wolf-chief is a heavy man, so I shall let him be on the edge of the tent lest the wind blow it away." She made this remark because on account of his war record she considered Wolf-chief inferior to other *maku′tsati.* He sent back word to this effect: "They are right. I'll be glad to weight down their tent. They will give me a horse for that, then I'll take my honor marks on them." Once he went on a war party, which killed two women. He took off their dresses and put their bodies together. "I am going to do this to Corn-stalk and Many-women," he declared, "then I'll give them whatever presents they may name." Wolf-chief did this to the women of the hostile camp. The two fellow-jokers sent back this message: "Brother, we don't want you to do that, we'll never bother you any more." According to old Indian custom, Wolf-chief would have been permitted to carry out his threat.

From a statement of Buffalo-bird-woman's it would appear that those whose fathers belonged to the same moiety were also *maku′tsati,* for she stood in this relationship to her own father, Small-ankle of the miripā′ti clan, since his father had been an iʻticu′xke, i. e., also of the Four-clan moiety. Small-ankle would chaff his daughter, saying to her, "I am a worker; you are lazy." On one occasion, however, she got even. Her father was boasting of his qualities but confessed that he had the fault of being jealous: —

“mī arutsā′wi ici′ətats. màtaruxpā′ka, matā′ ixa, ma + ici′ wa
My way is not bad. My relatives, my connections, I make them
nϵ′ cəts, mī wā ici′ ətāts. mawakī′rə makē′ + its mi
nothing bad. I am not stingy I hunt I do it for them. My
arutsā′ wi aru + icíə matúts: mī′ + awa‘xtϵ̄ īts.
way is bad some: I am jealous.”

Punning on the last word,[1] Buffalo-bird-woman asked, “who bet women in gambling so that Small-ankle could win them?”: —

“tapē′wa mī′ə aru + ϵ′ᵋ hϵwa, na′xte + ī‘?
“Who is it that women (obj.) bet, you won?”

A woman who was present laughed at this sally, and Small-ankle was ashamed and said no more.

The following myth is told about the ancient practising of the custom.

First-maker [2] (ī′ tsi ‘ka -wā′ hiric) and Spotted-tail [3] (Tsī′ ta-xa‘xi) were *maku′tsati* and were always watching each other. First-maker hid his food several times and Spotted-tail appropriated it. One day Spotted-tail took all his food and roasted it. First-maker roasted some prairie-dogs and then went to sleep. So Spotted-tail took them out and ate them, burying the bones. First-maker woke up, tracked Spotted-tail and found him asleep. Taking his knife, he cut open his back, cut out his guts and stuffed them with grass. Then he said, “Friend, get up and eat!” He offered him his own guts. Spotted-tail ate his guts and found the taste good. At length First-maker said, “Why, you have eaten your own guts!” “What are you saying?” Then the grass came out of him.

One day First-maker roasted geese. He fell asleep. Spotted-tail ate up all the geese and buried the bones. First-maker tracked him into a thick wood. When he got there, he wished to kill him. He pondered where to hit Spotted-tail, “If I hit him in the head, then there’ll be some blood when I eat him. If I hit his backbone, it will be the same way. If I break his legs, there will also be blood.” In the meantime Spotted-tail woke up and ran away. First-maker could not catch him, he came back to the same place. “I ought to have done this way to him,” he said. He struck the ground with a stick, breaking the stick and hitting himself.

One day First-maker was running after some bone grease. It jumped into the water. First-maker watched for it to come out. The water was all greasy. First-maker had no dipper and was looking about for some hair to use instead. He thought he had better cut off his tail. He did so, but in the meantime Spotted-tail had already used the hair on his feet to dip up all the grease, so First-maker had cut off his tail for nothing. First-maker said, “I always want to do what is right for my *maku′tsati* is always watching me.”

This was the beginning of the *maku′tsati* custom.

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[1] *mīa* woman, *maxt‘its*, I win in gambling.

[2] The Hidatsa hero-trickster.

[3] This animal I was unable to identify; Goodbird said it was extinct in the region inhabited by the Hidatsa.

MARRIAGE.

The Hidatsa and Crow agree in considering marriage by purchase as the most honorable form from the woman's point of view; but among the Hidatsa I got the impression, which I did not receive among the Crow, that it was somewhat discreditable for a man to have to buy a wife. Thus, if one man had married his sweetheart without such formality and a *maku'-tsati* who had bought a woman made any comment on his appearance, he might reply, "I am a good-looking man, you bought a woman because you are ugly," and this silenced the joker.

Great stress is laid in nomenclature on whether a wife has been previously married (p. 34), and I found that such a woman was married without purchase and without aid from any one else. When a young man bought a girl, his parents gave horses to her parents and vice versa, the return gift being sometimes of greater value.[1] Only a woman who had not been previously married was allowed to receive sacred objects for her husband in the transfer of medicine bundle prerogatives.

As regards residence, there does not seem to have been an absolute rule, but apparently in the beginning the young couple generally took up their abode with the wife's parents, the husband acting as their servant and providing them with food. If he wished to give away a horse, he would ask permission through his wife. The wife's parents treated him kindly during this period and if they had a horse to spare they would give it to their daughter. When there was issue from the union, the man became independent and might do as he pleased without asking leave.

The orthodox form of polygamous marriage was for a man to marry his first wife's younger sisters, this term being sometimes used in a classificatory sense. The native theory is that two wives who were not so related were likely to quarrel. The special term *iri' kuðts* (plural, *iri' kuowatu'*) is used for fellow-wives who do not get along with each other (see p. 35). Yellow-head and Cherry-woman, who were not sisters, were both married to Small-ankle. One day they quarreled. Yellow-head asked her mother to give Small-ankle her younger sisters for wives. "Then," she said, "I am sure Small-ankle will throw Cherry-woman away." Accordingly, Small-ankle married four younger sisters, three of them being full sisters and the fourth her mother's adopted daughter. Bears-looking had five wives,— Otter, Root, Large, Juneberry, and Corn-woman, of whom the first four were sisters. All of them stayed together for a long time. Sisters who are fellow-wives do not dispute but help one another.

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[1] Cf. Matthews, 52.

In spite of the considerable looseness which prevailed among the Hidatsa a pure woman was highly esteemed. "If a woman was good and kind, her husband loved her whether she had been previously married or not." "My husband never punished me, and I never fought him. We both lived well together. I was never foolish or bad, my husband knew it and never got angry. Some husbands nearly killed their wives because they went with other men."

It should be noted that to exhibit jealousy publicly was to expose oneself to ridicule at the hands of the *maku′tsati*. If a man eloped with a married woman, the husband might whip the adulterer, who was not permitted to strike back, and would make it hard for his wife after taking her back. But the jokers would make fun of the husband for his actions. Apparently the proper or at least ideal course was for the husband to let his wife go without protest. On this point my data entirely corroborate Matthews's statements.[1]

In case of a divorce the children remained with the mother and ceased to call their own father by that kinship term, which was transferred to their mother's husband if she remarried. However, the real father's clansmen remained the children's clan-fathers.

The levirate was in vogue, but a man who availed himself of its privileges might be derided by his *maku′tsati*, who would say, "You are like a bad-looking man, you are keeping your brother's wife, you could not get a woman otherwise." But the people at large regarded marriage with a deceased brother's wife as perfectly proper.

ATTITUDE TOWARD RELATIVES BY MARRIAGE.

Parents-in-law. The son-in-law at first occupies a position of inferiority with reference to his wife's parents, his status being somewhat that of a hired man, to use my interpreter's analogy. His status becomes one of independence, however, when children are born.

There is a taboo against social intercourse between the son-in-law on the one hand and his wife's father, her father's brothers and sisters, her mother, mother's sisters and grandmothers on the other. To put it more accurately, a man does not hold conversation with those persons whom his wife addresses as *i‘ka′*, *bacā′wi*, *taté′*, and *maku′*. Parents-in-law and son-in-law never pronounced each other's names and were not permitted to use any word that entered into the names. The taboo is said by one witness to have held and by another to have lapsed after the wife's death; but I learned of no case in which a woman adopted a deceased daughter's husband as a son by way of effacing the restrictions, though instances of this type were noted among the Crow. The rule of avoidance was not so strict between a man and his wife's father as with his mother-in-law, and in the case of an important happening the ordinary rule was broken, the father-in-law being addressed as "old man" and addressing his daughter's husband as son. In the old days there was only one way of abolishing the mother-in-law regulation, which was also noted by Maximilian for both the Hidatsa and Mandan.[1] Once Wolf-chief went against the Dakota, struck a coup as the third man, and cut off the scalp, which he saved. When he got home, he called out to his wife's mother, "Mother, I have brought you a scalp." She replied, "Thank you, son, I am glad to receive it." Thereafter he was permitted to converse with both his parents-in-law. As will be seen presently, this liberty was optional. If the son-in-law had not brought home a scalp, he would not even face towards his mother-in-law; if they accidentally approached each other, they would get scared and go out of each other's way.

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[1] Matthews, 54.

Two concrete instances illustrate the native point of view with regard to these observances, which are considered indicative of respect and in no way of animosity. Buffalo-bird-woman's husband brought two scalps for her mother but never availed himself of the privilege of disregarding the rule of avoidance: "He honored her too much." Another case is, if anything, even more instructive. Joe Packineau is married to an Arikara woman, whose tribe does not observe the avoidance rule. On one occasion her mother spoke to Joe in the presence of some of his Hidatsa friends, who were very much shocked and said, "What's the matter with your mother-in-law, Joe? She does not seem to have any respect for you at all!"

If the parents-in-law wished to direct their son-in-law to do something, they would employ the third person plural. Thus, to an ordinary person they would say, "*mi'ri ruwa' aaku'*," "Water some bring" (2nd person imperative), but if they wanted their daughter's husband to go on this errand they substituted, "*mi'ri ruwa' aakra' hu tā'pək‘*," "Water some they bring should."

Daughter-in-law. A daughter-in-law is well treated by her husband's parents. They give her good clothes and good things to eat. If they abused her, the people would disapprove of it.

Brothers-in-law. Brothers-in-law love each other. A man will present his sister's husband with a gun and horses, and on the other hand receives game from his wife's brother, as well as horses captured on a war expedition. When a man recites his coups, he will say, "I captured a horse and gave it to my brother-in-law."

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[1] Maximilian, II, 132.

As already noted, a man may jestingly refer to his wife's brother as his wife and is in turn called husband. This mode of address is used on the battlefield. If a wounded man catches sight of his sister's husband, he will say, "Husband, I am getting killed." Then his brother-in-law, if a brave man, will give help or even die with his wife's brother. Unless he did so, his brother-in-law would jeer at him for his cowardice, saying, "My husband is like a woman, he left me alone." A man who has captured a horse will say to his wife's brother, "My wife, take this horse." Otherwise his brother-in-law will say, "My husband got enemy's horses but did not give me any, he is bad!" If a man's wife's brothers capture horses while he himself does not, he is ashamed because his "wives" are braver than himself. If a man is sent out by his war party to get water of a dark night, his wife's brother may say, "He calls me 'wife,' yet he is more afraid than I am." When sent for water by one's "wife," a man cannot refuse to go.

Sisters-in-law. The brother's wife (w. sp.) and the husband's sister stand on a footing of equality. They give presents to each other and poke fun at each other without any resentment. Buffalo-bird-woman often received clothing from her brother's wife and several times presented her with horses.

Man and Brother's Wife. If a man died, he would bequeath his wife to his younger or elder brother, even if she was older than the legatee. Certain aspects of this levirate marriage are discussed under another heading.

Doubtless in connection with these marital rights, a man was permitted to exhibit considerable freedom in intercourse with his brother's wife. He might play with her and use funny words in order to make her laugh. However, he did not actually exercise marital rights while his brother was still living.

Brother-in-law and sister-in-law laugh at each other and try to make each other ashamed. If there was an ill-favored girl in camp, Buffalo-bird-woman would say that that was Bad-brave's sweetheart. He would declare that some bad-looking man was her husband or was courting her.

A woman makes moccasins for her husband's brother; he gives her a dress or blanket and money he has won at gambling.

Man and Wife's Sisters. In the old days a man who married the eldest daughter of a family had a preëmptive right to her younger sisters as they grew up. Even now Goodbird may treat his wife's sisters with great familiarity and may make fun of them, chaffing them about their husbands and sweethearts.

Wife's Brother's Wife. Unlike the Crow,[1] the Hidatsa have no taboo against social relations between a man and his wife's brother's wife. They talk freely and are expected to treat each other kindly and not cheat each other. There is mutual respect and accordingly no undue familiarity.

COMRADES.

Men would pair off as *ī raku'ə*, comrades. They would go on the warpath together and neither concealed anything he did from the other.[2] Hunts-alone, of the Knife clan is Goodbird's comrade. *ī kooxpa'* is the corresponding term used by a woman for her female confidante. Every girl had a special friend of this type, from whom she would not keep secret any of her love affairs or anything her lover said.

NAMES.

When a child was about ten days old, the parents would ask some relative owning a medicine bundle to name it. Names designating parts of the bear's body were very common.

Buffalo-bird-woman (waxī'ri wi'əc) was at first named by Àru wiri'tsa'kic (Watery-mush?), one of her grandmother's brothers, who was possessed of supernatural powers. He called her Ōruwi'tsaki'c, "When-he-goes-he-always-has-good-luck." But she was often sick in infancy, so her father gave her a new name to make her strong. Goodbird was so named by his maternal grandfather, Small-ankle, who had a bird for his medicine.

The importance attached by the Hidatsa to new names and their connection with the functions of the father's clan mates have been discussed under another heading (p. 41).

There is no taboo against the use of a dead person's name. That of a famous warrior may be conferred on a young man who has distinguished himself and people are glad to hear it again.[3]

A few additional facts are noted by Matthews. According to him, a male infant sometimes received as many as four names composed of the same noun with different adjectives; but only one of these was commonly used.

> In after years, the names of the males are changed once, or oftener, or rather new names are given; for they will be called as often by the old names as by the new.

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[1] Lowie, (c), 214.

[2] Lowie, (c), 212.

[3] Cf. Matthews, 55.

The first new name is usually given to a youth after he has first struck an enemy in battle. The names of women are rarely changed. Sometimes, if a name is long, a part of it only is used in ordinary conversation.

Matthews found bashfulness about telling one's name less highly developed among the Hidatsa than with other tribes: some individuals would answer reluctantly or refer the questioner to another person who might give the required information.[1] Maximilian states that when an infant is to be named the father goes on a buffalo hunt. When he returns, he packs from ten to twelve large pieces of meat on his back, putting his child on top. Staggering under the load, he goes to the medicineman who is to name the child and presents him with the meat as his fee.[2]

BURIAL.

The burial practices of the Hidatsa are sociologically interesting because of the prominence assumed by the father's clansmen. This feature seems to have been absent among the Crow.

Before the death of a person either he himself or one of his relatives appoints one of the patient's clan-fathers or aunts to conduct the funeral. The individual designated collects all the dying person's old clothes and receives some of his property as his fee. This might consist of either horses or guns, these being considered of equivalent value in the old days. Some property was saved for the widow. For example, the tipi might be kept and the earth-lodge always was. It was considered miserly for the master of ceremonies to keep all his fee for himself; most Hidatsa in this position would distribute gifts among their friends.

When the patient's death was approaching, the father's clansman who directed the proceedings, washed and painted his clan son's face and dressed him up as though in preparation for a visit to other people; marks indicative of his war honors were put on the dying man. When he had breathed his last, the family and also the master of ceremonies gashed their arms and legs with sharp flint knives, cut off their hair and some of the finger-joints, and sometimes stabbed their heads with an awl or knife so that the blood would flow down. All the father's clansfolk wept over their lost "son." The corpse, stretched out on a robe, was formally borne to the graveyard by four or more clan-fathers or aunts.

Wolf-chief says that two modes of burial were in vogue and the one preferred by the dying man was followed. One method was that of actual interment, the director digging a pit into which the body was lowered. Pieces of wood were placed on top and the hole was filled in with earth. The second way was scaffold burial, in which case four forked posts were set in the ground and the corpse was secured by means of ropes. Maximilian mentions both forms of burial but according to him it was only the bad people who quarrel and kill one another that were interred. In this case a buffalo skull was laid on the grave lest the herds should move away and fail to return when they scented the wicked persons. The good were placed on stages so that the Master of Life might see them.[1]

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[1] *ibid.*, 54 f.

[2] Maximilian, II, 217.

In depositing the body the clan father thus addressed it: "My son, do not look backwards but go to the ghost land. You will meet many of your beloved ones there. You must not expect us, your family are remaining here. Go alone. We are poor." This speech sends the spirit to the land of ghosts. If some person not a clan father spoke thus, the spirit would not go to the ghost land but would get lost. When the corpse had been buried, the director of ceremonies took some sage, rubbed it into a ball and gave it to each person who had touched the corpse in order to ward off illness from all concerned.

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[1] Maximilian, II, 235.

SUPPLEMENTARY NOTES ON THE SOCIAL LIFE OF THE CROW.

Clans.

Later investigation has established the essential correctness of the data presented in my former publication. That is to say, the Crow were divided into thirteen exogamous matrilineal clans linked together in six loose phratries, most if not all of which were non-exogamous.

In an unusually careful study of my earlier paper[1] Doctor Goldenweiser has suggested that the Crow, like the Hidatsa, once possessed the dual organization. Its absence is of course one of the striking cultural traits of the Crow when compared with their next of kin, as I have myself pointed out. I was at one time inclined to explain the difference by assuming that the Hidatsa adopted their moiety system from the Mandan. For reasons given, which I admit are not decisive, I now rather favor the hypothesis that the Hidatsa moieties are older than those of the Mandan. This view lends somewhat greater *a priori* plausibility to the one-time existence of the dual division among the Crow. Nevertheless, the fact remains that of any such organization no trace is perceptible.

The etymologies of the clan names, which owing to the sometimes extraordinary contraction of words, were not always correctly rendered in my earlier publication, are given below in accordance with the latest interpretations secured.

1. a'cirā rī'o; acϵ', lodge; hirā', just now; rī'o, they made. Newly-made Lodge.
2. acitsi'te; acϵ', lodge; citsi'te, thick. Thick Lodge.
3. acī' oce; acϵ, lodge; ī, lip, mouth; ō'ce, cooked, scalded. Sore-lip Lodge.
4. ū' wutace'; ū'wu, the inside of the mouth; tacé, greasy. Greasy inside the mouth.
5. ū'sawatsiə; ū, they shoot, hit; sa, not; batsi'ə, to hunt, bring game. Without shooting they bring game.
6. xu'xkaraxtse'; xu'xka, in a knot; daxtse', to tie. Tied in a knot.
7. acpéñuce; acϵ, lodge; pē̃'re, filth; dū'ce, to eat. Filth-eating Lodge.
8. ē̃' rarapīo; ē̃'re, belly; arapī' o, they kick. Kicked in the Belly.

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[1] Goldenweiser, 281–294.

9. ack·a′pkawi‘∂; ack·a′pe, war honor; xawi′∂, bad. Bad War Honors.
10. biri k·ō′ oce; birɛ′, water; k‘ō′ oce, to whistle. Whistling Water.
11. acxatse′; acɛ′, lodge; xatse′, streak. Streaked Lodge.
12. ack·ā′mne; acɛ′, lodge; k‘ā′mne, Piegan. Piegan Lodge.
13. a‘cbatcu′∂; acɛ, lodge; batcu′∂, awl, treacherous. Treacherous Lodge.

There was hitherto some doubt, which cannot yet be resolved, as to whether the ack·ā′mne and the a‘cbatcu′∂ were distinct clans or whether these were merely two names for the same division.[1] According to Hillside they were distinct, intermarried, and like other linked clans gave mutual aid: —

"ack·ā′mne	a‘cbatcu′∂	bats-áxpuk‘,
"The Piegan clan	the Treacherous clan	each other they married,
bats-k’uxsū′k‘."		
each other they helped."		

Though Ū′uciec denied this, saying that ack·ā′mne and a‘cbatcu′∂ were only two of four different names applied to the same clan, he gave corresponding testimony respecting several other linked clans. The a‘cirārī′o and acitsi′te, he said, "*rū′pe* + *uk, dū′pta, wats — a′xpa‘kūk*‘, i. e., "They are two, separate, they intermarried continually." He made the same statement for the ū′wutace‘ and acī′ oce; the acpénuce, xu′xkaraxtse, ū′sawatsi‘∂; and the ɛ̄rarapī‘o and ack·ápkawi‘∂. On the other hand, he asserted that the acxatse′, birik·ō′ oce, tsi‘pawaī′itse and acbatsī′rice were only several names for a single clan.

In short, the evidence remains contradictory as to the same two groups as before,[2] while the distinctness of the linked clans in the four other divisions may be considered as definitely established.

There are several versions of a tale recounting a conflict between the ack·ā′mne and birik·ō′oce.

Like the Abderites among the Greeks and the natives of Schilda in German folklore, the people of the Bad War Honor (ack·ápkawí∂) clan enjoy the reputation of proverbial stupidity. The people say, "*ack·ápkawī∂ warā′xuk*‘," "The Bad War Honors are crazy." A few anecdotes were retailed to illustrate their folly.

Once they were all camped together when the Piegan attacked them. The men and women all took to the woods except for one young man who climbed a tree. The enemy at first did not see him. After a while they cut up a tipi near-by. One of them opened a bag and took out some buckskin. The man hiding said, "Don't take that, the owner is no good."[1] Then the Piegan caught sight of him and killed him.

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[1] Lowie, (c), 192.

[2] Lowie, (c), 194.

On another occasion an ack·áp kawíə saw another Crow wearing beaded buckskin leggings with red fringes. He asked how they had been made. The owner told him to take the leggings to his wife and have her cut them after the same pattern, then he should kill a buffalo, bring its bones home, boil them till the grease rose to the top, cool the grease, plunge his leggings into it and place them under his bed on the ground. "The next morning, when you get up, they will be just like mine." The ack ápkawíə followed these directions, but when he got up the next morning his leggings were so greasy that he did not know what to do with them; he hung them up and sent for his adviser. When the man saw the leggings he gave him his own.

Magpie, who was still living at the time the tale was told about him, once took a Crow of his own age for a Piegan and invited him to his house by means of gestures, asking how long he had been on the Reservation. It was only when the supposed foreigner spoke in Crow that Magpie found out his mistake. He could not do anything about it for he had already given him food. The reason for his misunderstanding was that he had seen someone else making signs to this Crow. On another occasion Magpie wished to call Lewis Moccasin by name but instead he uttered his own Crow name *ā′kʽe wirə xbā′kʽe*, "Indian." Magpie's wife has told other people that her husband once put on his moccasins on the wrong side and never noticed it till his attention was called thereto. My interpreter has heard people say that Magpie once tried to strike mice with a pitchfork but struck his own foot. In talking about Magpie the Crow were wont to say, "*ack·áp kawikāʽce*," "He is a genuine ack·ápkawíə," (kā′ce is the superlative suffix).

In accordance with the Crow and Hidatsa custom of giving nicknames for peculiarities evinced by one's father's clansfolk (p. 41) the Crow are in the habit of throwing into a person's teeth the fact that his father is of the notoriously foolish clan. When a boy whose father is an ack·ápkawìə does something silly, people say, "He is one of those who told the enemy not to take the buckskin," or, "He is one of those who boiled their leggings." Medicine-crow's real father was an ack·ápkawíə. When Medicine-crow has done anything wrong his wife scoffs at him, saying, "*irúpxembicè ack·ápkawaʽu — racèn*." "He has the Bad Honors for fathers, that is why." This seems to correspond exactly to our saying, "That's the Irish of it."

It was principally a man's wife, his brothers' or clan-brothers' wives, and his joking-relatives who made fun of him for being a typical ack·áp-kawíə. Gray-bull did not make fun of Magpie because Magpie's son, Yellow-brow, was Gray-bull's son-in-law.

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[1] Meaning presumably, that it was dangerous to trifle with his property.

The custom of giving presents to father's clansmen was described in my earlier paper. I have since repeatedly obtained a traditional justification of the usage, the same motive being always apparent. A brief version follows.

> Three young men were friends. They said, "Let us do something. To one they said, "Do you frequently build sweatlodges and go into them." To the second they said, "Give presents to the Sun all the time." To the third they said, "Always give food to your *ā'sa 'ke.* "They were going to see who would live longest. The one who gave presents to the Sun became a chief but he was the first to be killed. The one who built sweatlodges was killed when he was only fairly old. But the one who entertained his father's clansmen lived to be very old. Since then we have given food to our clan-fathers. We never passed in front of them unless we had previously given them a present.

Young-crane thought marrying into her father's clan was as bad as marrying into her own, for then she would call her husband "father." Accordingly, though she was sought in marriage by acī'oce men she declined to have anything to do with them. However, she added that women did marry father's clansmen provided they were not closely related. This agrees essentially with previous information.[1]

TERMS OF RELATIONSHIP.

Further study has convinced me of the correctness of a statement made in my previous publication, viz., that nothing short of a perfect knowledge of the Crow language suffices to ensure an absolutely trustworthy and complete description of the Crow kinship terminology. However, I have been able by repeated inquiries and, still more important, by direct observation in the field and examination of texts recorded by myself, to revise and amplify my original account.[2]

The most serious error in my former list relates to the designation of the father's sister's children, who are not classed with brothers and sisters but are set in the first ascending generation,— the sons of the paternal aunt with the father and her daughters with herself. In short, Crow usage coincides in this respect with that of the Hidatsa. My error seems the less pardonable because the essential facts had already been grasped by Morgan.

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[1] Lowie, (c), 201.

[2] Lowie, (c), 207 et seq.

A painstaking analysis of my old data on Crow nomenclature has been published by Doctor A. A. Goldenweiser,[1] who rightly criticised my method of objective enumeration of meanings, which made no attempt at bringing out the rationale of the system. Though I am very appreciative of the care this author has devoted to the examination of my list, I am unable to accept as valid any of his other comments of a theoretical nature. For one thing, the Crow system is not based on a single principle of classification but on a number of disparate and in part contradictory principles. Thus, the occurrence of a specific term for the paternal aunt in the absence of a correlative for the nephew or niece is an inconsistency. While certain portions of the nomenclature undoubtedly form organic units, this certainly does not apply to the entire series and accordingly it seems wrong to generalize that "the principles of classification on which such systems rest always prove exceedingly simple and, as soon as revealed, serve to coördinate the apparently complex series of terms." Secondly, Doctor Goldenweiser arbitrarily excludes a number of terms on the ground that they are "not terms of relationship," among them *bacbī'∂*, my fellow-clanswoman, literally, "my woman." The fact is that most of these terms are actually applied by the natives as terms of relationship and the phonetic equivalent of the one cited is the regular Hidatsa word for elder sister (m. sp.). Further, a combination of stems rejected by Doctor Goldenweiser is the normal way of referring to a son or daughter non-vocatively. Doctor Goldenweiser cannot seriously suggest the elimination of all terms of which the etymological derivation is established. Thirdly, I have never succeeded in grasping the advantage of the diagrammatic form of presentation used by Doctor Goldenweiser and other Americanists. If I adopted any scheme of this sort, I should prefer that of J. O. Dorsey in his tabulation of the Omaha system; but I do not consider this indispensable. Finally, I am obliged to challenge the method of reconstructing the pristine Crow system without a consideration of all other available Siouan terminologies or those of other tribes historically connected with the Crow. Conclusions based solely on the Crow list necessarily suffer from excessive rationalization and must be purely speculative. Thus, Doctor Goldenweiser contends that because man and woman use diverse terms for the father, there must once have been a similar dichotomy in the designation of the mother. Yet Professor Kroeber long ago pointed out that the majority of Indian categories are expressed only in part of their nomenclatures and that complete consistency in this respect would involve a monstrous wealth of terminology. Similarly, how many Indian tongues consistently discriminate the sex of the speaker in all the designations of elder and younger *Geschwister*? It is, therefore, simply an instance of the rationalistic fallacy to infer the former existence of separate male and female terms for elder sister and younger brother from the corresponding sex-discrimination in dealing with the elder brother and younger sister.

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[1] 288 et seq.

In order to comprehend the Crow system a number of linguistic points must be understood.

batsϵ' is the regular word for "man," *bī'ə* for "woman," *dā'k(e)* for "child," the suffix *kā'ta* has a diminutive meaning with the secondary sense of endearment, while *kari'cta* rather indicates mature youth (*bī'akā'ta,* "girl," *bī'akari'cta,* "young woman"). *kā'*^{a}*re* is the normal expression for "old woman," *isé* (*isá*) means "big, old" and an obvious derivative, *isā''ka* is the word for "old man;" *bats* is the reciprocal prefix.

As to the use of pronouns with stems, certain differences are worth noting. A number of vocative terms, e. g., *axϵ'*, "father," entirely lack a pronominal prefix. In perhaps a majority of cases there is contraction of the possessive pronouns, *bas-, dis-, is-,* which are ordinarily used with vocables other than those of relationship, by eliminating the final *s*. Thus, we find *barā'ace, dirā'ace, irā'ace* for the brother-in-law term. Sometimes the simple stem has a potential third person possessive meaning and cannot take the prefix *i*, while the other persons merely prefix *b* and *d*. Thus, we have *búa, dúa, úa,* the last form meaning both "his wife" and "wife" in the abstract. On the other hand, the ordinary possessives are employed in some cases, e. g., *basbā'xíə, dísbāxi'ə, isbā' xíə,* "paternal aunt." In at least two cases where the simple stem has a potential third-person meaning, the second person is formed not with *di* but with *da,* viz., *datsíre,* "your husband," *darā'ke,* "your child."

In a number of cases the change from vocative to non-vocative coincides with a change of terminal *a* to *e*. This usage is not without correspondence in other departments of the language. Thus, the culture-hero, Isā''kawuəte, is addressed as "Isā' 'kawuətà."

Phonetically, it is necessary to note that initial *b* and *m*, which I preserve in accordance with my previous orthography represent a single phonetic element,— weakly nasalized *b*; further, that this sound regularly becomes *w* in intervocalic position.

As regards Crow-Hidatsa correspondences, the most striking ones have been correctly summarized by Matthews[1]: Crow *c* or *s* is the equivalent of Hidatsa *t*; Crow *n* of Hidatsa *dz*; Crow *k* of Hidatsa *ts*.

There are certain generic expressions for relatives, the precise delimitation of which is not easy. In asking a person what his relationship is to another, the approved query is: *diri' cọ̄'ᵒta?* "Your relative what sort of?" The same root is employed in the worst insult that can be hurled at a Crow: *di ak-irī'-hāwè,* "You are one whose relatives are non-existent (destroyed)." [1] I do not remember hearing this stem used with the first person pronoun. Another commonly used expression is *birəxbā'ke,* the normal word for "person" and "people"; it seems to me to be used very freely, as Americans use the word "folks." Linguistically, it may be noted that the unabbreviated pronominal forms, such as are prefixed to vocables other than relationship terms, are used with this word. We find, e. g., *bats-is-birəxbā'kua,* "They are one another's relatives." In prayer a man will say, "*bas-birəxbā'ke ítse awī'rupe awā'wi,*" "My people (obj.) safely (to) the next year may I bring them." The expression was used to denote the relationship between linked clans: the ɛrarapī'u and ack·ápkawī'a were said to be *is-birəxbā'kua,* one of the other. Exactly the same meaning was ascribed to another word *sā'pe,* which interrogatively means "what ?" declaratively "something," the idea being apparently that relatives are "something" to one another. Thus, the acītsíte and acirārī'o were said to be *bats-isā'puk,* "reciprocally their relatives they are." The statement was added that *sā'pe* is applicable to one's own as well as to the linked clan. Another authority extended it to the father's clan. Another interrogative, *cō'ᵒ'ta,* occurs with a similar generic meaning of relationship. In a myth both these words occur in close juxtaposition: *isā'pu rək ak-bats-icō''ta-kācī'-rək a'sū'rək',* "Their relatives and those who were very closely related many had died." Here the idea of closeness is not embodied in the stem but in the usual superlative suffix *kāci.*

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[1] 78 et seq.

TERMS OF CONSANGUINITY.

Speaker's Generation. In order to avoid repetition, I state at the outset that as in Hidatsa nomenclature parallel cousins are brothers and sisters while cross-cousins are placed in other generations. Male clansfolk are brothers, female members of one's clan and generation are sisters.

bī'ik·a (m. sp.). My elder brother, mother's brother, mother's mother's brother. I doubt whether my earlier statement that this term was applied to a maternal uncle, whether older or younger, holds, for it seems to designate fundamentally relative seniority of the person denoted; obviously in most cases the uncle would be older than the nephew.

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[1] Cf. Lowie, (c), 245.

matsū′ka. My younger brother (m. sp., w. sp.), sister's son (m. sp.), [sister's husband younger than myself (w. sp.)].

basa‘kā′ᵃta (m. sp., w. sp.). My elder sister. This word is clearly a derivative from *masa‘ké,* "my mother," and the diminutive suffix; in other words its literal meaning is "little mother."

bàsa‘tsī′ita (m. sp.). My younger sister, sister's daughter.

basā′ᵃre (w. sp.). My elder brother, mother's brother, mother's mother's brother, [husband's brother].

basō′ᵒka (w. sp.). My younger sister.

makú kata (m. sp., w. sp.). My elder sister, [brother's wife older than I]. This word is possibly restricted to vocative use. In both senses the proper vocative correlative is *xū′ᵘtse,* though this word perhaps more frequently means "daughter" than either "younger sister" or "younger sister-in-law." I believe that *makú kāta* is the diminutive survival of the Hidatsa word *makú,* "my grandmother."

bakúpe (m. sp., w. sp.). My brother or sister. This term may be applied to fellow-clansfolk, as when a man who has married within the clan is spoken of: "*akúpe áxpϵc,*" "He has married his sister." But this strikes me as deliberate extension of the original meaning for the purpose of emphasizing the impropriety of non-exogamous unions. According to Shell-necklace, brothers and sisters sharing at least one parent, moreover the children of two brothers and two sisters were *bats-akúpuə,* while mere clansmen were one another's *bāsā′ᵃpe* (see p. 59). Flat-back went so far as to limit the term *akúpe* to persons sharing both parents, but this was challenged by all other informants.

bacbatsϵ′ and *bacbī′ə,* "my man" and "my woman," are used generically for own and clan *Geschwister,* regardless of relative seniority. Thus, in describing the proper form of marriage an informant said that the bride's brothers, *ic-batsϵ′-o,* received horses. It was said that *bacbī′ə* is not used of little girls if they are own sisters but may be applied in any case to more remote "sisters," and that the term was used preferentially for adoptive and clan sisters.

In addressing a younger brother, or perhaps any other younger male relative, the terms *cik·á* (*-ake*), "boy" and *barā′ax*(*a*), "crazy one" are sometimes employed. Correspondingly, mī′akā‘te, "girl", is used for a younger sister or female relative.

The *Geschwister* nomenclature is well illustrated in mythological texts. In the Bear-woman tale there figure two sisters and their six brothers. The younger girl calls her elder sister *maku′ kā‘ta* and is in turn addressed as *xū′ᵘtse.* On the other hand, the more common terms for elder or younger sister repeatedly occur in non-vocative usage. Thus, the brothers say to the little girl, *disá ‘kā‘te k‘u,* "To your elder sister give it;" and in defining the little girl's age the narrator said, pointing to his own grandchild, *isōˋké ī′mbe kara-k‘ukī′ imāˋtsik*, "Her younger sister may have been of the size of that one." From this it might be inferred that *basa‘kā′ᵃta* and *basō′ᵒka* are merely non-vocative stems. But since they were given to me in precisely this form, i. e., with the vocative ending, I believe that they are correct vocative terms which may be transformed to the non-vocative by change of final *a* to *e*; and that *maku′ kāˋta* and *xū′utse* are simply supplementary and optional vocative forms.

In the same myth the customary word is regularly used for a female's elder brother. Thus, the girl says, *masāˋré, dā′raxta sāpa?* "Elder brother, don't you know what (it is)?" And non-vocatively we find, *isā′re i + a′-kawuˋrək dúxira + u‘tseruˋk*, "Her elder brothers, six of them, had gone on a war party." On the other hand, the girl, probably on account of her youth, is addressed as *bī′akāˋte*, "girl," but referred to by the usual specific term, e. g., *isa‘tsī′tuec isā′cg·ekāckā′tbici‘tseruk*, "Their younger sister had a little dog, it is said." When the wicked sister sees that she is getting the worst of the contest, she tries softer measures, saying to the little girl, *di bakúpkāˋt bāˋ + ic*, "You (as) my little sister I'll treat." Here the diminutive probably has rather the sense of endearment, as it undoubtedly has in another myth where adults are thus addressed. *bakúpkāˋta, bī watsεck·ā′t‘*, "My dear brothers and sisters, I am poor." This example incidentally illustrates the vocative use of the term.

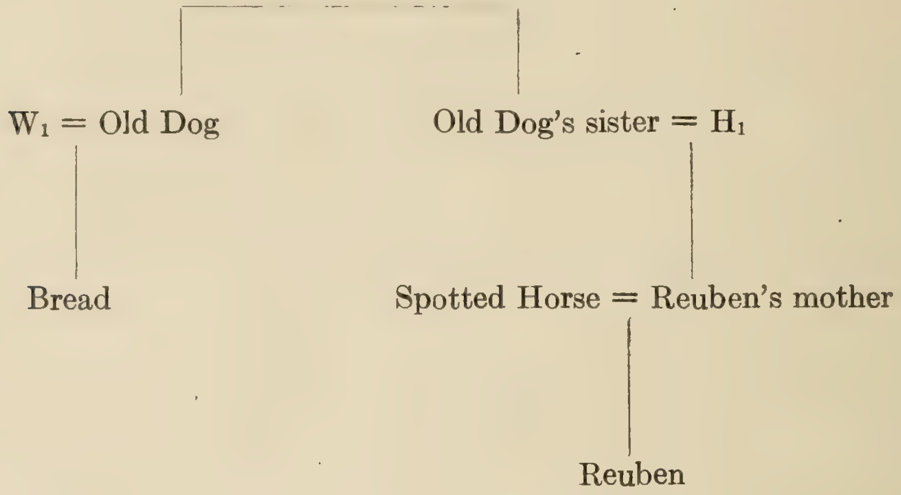
The usual words for elder and younger brother (w. sp.) constantly occur in the texts. In the tale of a wicked brother-in-law who had plotted to eat his elder brother's wife, the woman, after saving her husband from starvation, thus addresses him: *ditsū′ke bī rū′cbiə-sāˋ-rək, ku‘ awō′rək‘, īrī′ⁱmāˋtsik*, "Your younger brother if he had not wished to eat me, him also I should have brought with me, he would be living." In accordance with the usual inclusiveness of Indian terms and the disinclination to employ proper names in address, we find these terms extended to individuals where there is no evidence of blood-kinship. In the tradition of the separation of the Crow and Hidatsa, a member of the aggrieved party enters the chief's lodge and says, *bī′ik·a, baˋmdī-watsiwē′ wiˋawak‘*, "Elder brother, I want to tell you something." In an Old-Man-Coyote tale the trickster meets a buffalo calf, which he at once regards as his younger brother: *batsū′k hiñe′m batsεck·ā′t‘*, "This younger brother of mine is poor;" in turn the calf addresses him as follows, *bī′ⁱk·a, k‘an-dapácēk·*, "My elder brother, you are tired now." Similarly, in asking some ducks to dive for land, Old-Man-Coyote addresses them as *matsū′ kāˋtu*, "My dear younger brothers."

It is interesting to find that in the story of the twin boys the heroes uniformly address each other as *barā′ᵃx(a)*, "Crazy one."

cik·á, of the same stem as *cik·ā′ᵃke*, "boy," is not necessarily limited to relatives but seems to be a friendly greeting between males. For example, in the myth of the Bungling Host, Old-Man-Coyote thus addresses the Owl.

Since the son of a Crow's paternal aunt is addressed as a father the father's sister's son's son is a "brother," and the father's sister's son's daughter a "sister."

The characteristic disregard of generations may be clearly illustrated with the aid of the following diagram.



Old-dog is elder brother to both Reuben's mother, his sister's daughter, and to Reuben, his sister's daughter's son; he is their *aku'pe.* Old-dog, at the time of my visit, was about eighty, Reuben a little over twenty years of age.

Mrs. Old-dog's daughter would call her mother's mother's brother *basā' are.* Though this is evidently the approved method of designating the maternal uncle and great-uncle, in accordance with Hidatsa usage, there is some tendency for the generation factor to assert itself, so that in the absence of a specific avuncular term some Crow of both sexes, call the mother's brother "father," while the great-uncle is sometimes called "grandfather." Gray-bull connected this less usual mode of designation with the custom of adopting and bringing up a sister's child. In such a case, he said, the child would call the mother's brother with whom it lived "father," while its own mother would be called "sister" and its own father "brother." This is a point on which I should like to obtain corroborative data.

Plenty-hawk calls his stepson *barā'x,* "Crazy-one."

First Ascending Generation. akʻé, akʻsé. Parent, used only non-vocatively, I think.

axɛ′ (voc., m. sp.). Father, father's brother, father's mother's brother, father's sister's son, father's clansman regardless of age, [mother's sister's husband], [father's sister's husband].

mirúpxe (non-voc., m. sp.). Coextensive with above. Though this word is never used in address, a derivative *mirúpxe k·āʻta,* which etymologically means" little (dear) father" may be so employed. However, it is not properly a term of kinship at all, but denotes either a specific relationship between two men which will be described presently, or secondarily simply intimacy or friendship. Sometimes a good-looking young man would temporarily surrender his sweetheart or wife to one of his friends. In such a case the two men called each other *mirúpxek·ā'te.* Sometimes the young man desired to get some medicine from an old man and would similarly surrender his marital rights.

Gray-bull himself secured some war medicine from an old man, for which he first yielded possession of his mistress and later of his wife. The medicine was used for stealing horses from the enemy. This old man was the informant's mother's brother, but thereafter the reciprocal term mirú pxek·āte was used by both. Simply as a joke this term is applied by Bull-chief to Gray-bull, a fellow-clansman. In the historical tale of Spotted-rabbit, the hero after becoming a Crazy-dog-wishing-to-die (see p. 83) has a love affair with the wife of Two-faces, who thenceforth regards him as *iru'pxek·ā'*te. In another story two men who have stolen each other's wives in reconciliation establish the same mutual relationship.

mā'sa'ke (non-voc.). My father's clansman. The corresponding vocative form in *a* was used only in praying to the Sun.

masā'ka, masā'ke (voc. and non-voc., w. sp.). Coextensive with axϵ' and *mirúpxe* in female parlance.

i'g·á (voc., m. sp., w. sp.). Mother, mother's sister, mother's clan sister of her own generation, [father's brother's wife], father's sister, [husband's mother].

masa 'ké (non-voc.). Coextensive with *i'g·á.*

basbā' xíə (non-voc.). Father's sister, father's sister's daughter, father's sister's daughter's daughter, and all female descendants through females *ad infinitum.* This term corresponds to mā'sa'ke with the difference that it designates the father's female clansfolk while the latter denotes male members of his clan. Etymologically, I feel certain that this word goes back to the *Hidatsa* stem *xíə*, "old"; *ba* being a nominal prefix. The term thus literally means "my old one." This, of course, suggests a secondary extension of meaning from the primary one of father's sister.

The use of terms may again be abundantly illustrated by text material.

In a song sung in derision of the Lumpwood society,[1] these words occur: *dāk ake'retbā' wik·*, "Their children parentless I'll make." A tradition begins with the statement: *isā'k'ci rək bāk'ē'-wisak'*, "A young man had parents." In regard to the same character the phrase *b ā' k'sā' wi cè c* is also applied, meaning "the one who had parents."

The distinction of speaker's sex in addressing the father appears very clearly. When one of the twin heroes speaks to his father, he says, *axϵ'*,

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[1] Lowie, (d), 170.

dɛ hamakú, "Father, your food give me some," but when Whirlwind-woman is admonished by an old man, she answers, díə, wasā'ka', bītsiwa' waku', "Come, father, tell me for my sake." The equally rigid differentiation in non-vocative use was forcibly brought home to me when I once asked a half-breed girl where her father was: *dī' rupxe cō?* This produced great merriment, the only possible form in speaking to a woman being *disā' ke.* For instance, after Coyote's supposed decease his wife says to their daughter, *disā'^{a}ke ariri'əc díə wā'wu,* "Your father, what he said let us do." In the myths it is common to refer to a person's parents specifically instead of using the generic parent term discussed above. For example, *masa'kú^{u}-rək mirúpxu'^{u}-rək am-barē'-tsiwá + u,* "Our mothers and our fathers what they have told us." Here the speakers are male. When the Buffalo-woman's parents are referred to, however, the phrase is *isā'karək isá'k-arək,* "her father and her mother." That is to say, the stem for "mother" remains the same, that for "father" is fundamentally distinct.

The difference between vocative and non-vocative stems for the parent terms is readily illustrated. In the Old-Woman's Grandson myth, the boy hero asks his mother to dig wild turnips which they shall eat: *i'g·a', ihē̄'m bākpə'k' bū'cbōk.* The story continues: *isa'ke', dī'rupxe bare' api''tseruk, hɛ'tseruk,* "His mother, 'Your father us to dig forbade' she said." In another story a boy identifying his father says, *mirúpxe k'ōk',* "My father, it is he."

A prayer to the Sun opens with the following allocution: kahé, mā'sa'ka, kandisā'^{a}ce díawā' hik·, "Well, father's clansman, now your blanket I have just made." In a story dealing with the origin of the sweatlodge, a character is thus admonished: *dī ik·uctci'-rək, dā'^{a}sa'kèm bā'^{a}ku,* "When you go out, (to) your father's clansman give something."

According to Gray-bull, it was only the husband of an own or at least closely related "paternal aunt" that was called *axɛ'*.

Grasshopper's daughter addresses her paternal uncles *masā'k 'ā* and her father's sister *i 'g·a'*.

It is interesting to note that the relationship through the father's clan may be superseded as a result of marriage. Thus, if a birik·ō'oce married Gray-bull's daughter, Gray-bull would no longer call him "father" but consider him his son-in-law; while by marrying Gray-bull's sister, he would become his brother-in-law.

Second Ascending Generation. axɛ'-isà'ke (voc., m. sp.). Father's father, father's father's brother, mother's father, mother's father's brother, grandmother's husband, mother's mother's brother (optional).

mirúpx-isà'ke (non-voc., m. sp.). Coextensive with the above.

masā'k-isà'ka (voc., w. sp.). Coextensive with above.

masā′k-isà ʻke (non-voc., w. sp.). Coextensive with above.

masa ʻkā′^{a}re (voc. and non-voc., m. sp., w. sp.). My grandmother, grandmother's sister, mother's paternal aunt, father's paternal aunt, grandfather's wife.

The etymology of all these terms is transparent, *isa\`ʻke,* of the same stem with *isé, isá,* "old," "big," is the essential element of the customary word for "old man," *isạ̄′ ʻkakā\`te*; cf. *Isā′ʻka-wuətè,* Old-Man-Coyote. In other words, the grandfather terms are composed of the "father" term plus the stem for "old man." *masaʻkā′^{a}re* is similarly compounded by contraction of the non-vocative term for "mother" with the customary word for "old woman," *kā′^{a}re.*

In the Old-Woman's — Grandchild cycle the hero's adoptive grandmother thus announces that he has killed her husband, *ē̄ʻk dī′rupx-isa\`ʻka kʻōkʻ,* "That one your grandfather was identical with." In telling the old woman of his departure, the hero says, *masaʻkā$^{a}$re, bā\`wac barē′ wik·,* "Grandmother, I am going to hunt." When he gets back to her, the same stem is used non-vocatively: *isaʻkā′^{a}re hi′əkʻ,* "His grandmother he reached."

In prayer the Moon is said to have been addressed as *masaʻkā′^{a}re.*

Sunrise is regarded as Plenty-hawk's grandson, because the latter married Sunrise's grandmother.

Gray-bull's granddaughter calls both Gray-bull, who is her father's father, and her mother's mother's brother *masā′k-isà ʻke.* She likewise calls Horn, her mother's mother's sister's husband "grandfather," and his wife "grandmother."

Descending Generations. bā\`kā′te (non-voc.). My child. Composed of nominal prefix and diminutive suffix.

dāk, rāk, nāk (usually non-voc.). Child, both with and without kinship significance.

dā′k-batsɛ\` (non-voc.). Son, literally "child-man."

dā′k-bī\`ə (usually non-voc.). Daughter, "child-woman."

irō′ oce (voc.). Son (m. sp., w. sp.), brother's son (m. sp., w. sp.); mother's brother's son (m. sp., w. sp.), mother's mother's brother's son (m. sp., w. sp.), sister's son (w. sp.), grandson (m. sp., w. sp.).

xū′^{u}tse (voc.). Daughter (m. sp., w. sp.), brother's daughter (m. sp., w. sp.), mother's brother's daughter (m. sp., w. sp.), sister's daughter (w. sp.), granddaughter (m. sp., w. sp.), younger sister (w. sp.), [younger sister-in-law, (w. sp.)].

màcbāpíte (non-voc.). Grandchild (m. sp., w. sp.).

Perhaps the most interesting point in regard to these terms is the limitation of the "grandchild" term to non-vocative use. Phonetically it corresponds perfectly to the Hidatsa stem, which, however, is used both in direct address and otherwise. The Crow connotation is clearly exemplified both in daily life and in mythology. Thus, Young-crane calls her daughter's daughter *xū'^{u}tse*; in the Old-Woman's Grandchild myth the hero's name is *Kā'ricbā`pi'tuədc* ("Old woman her grandchild," plural form), but she addresses him as *irō'$^{o}$ce*, or with added diminutive *irō'$^{o}$ck·ā`ta*, never as *ma`cbā píte*. She does, however, apply to him, both vocatively and non-vocatively, the generic "child" term. For example, we find: *warā'k‘ bā` warā'xkā`tec*, "my grandchild is a crazy one;" *ík·a, barā' kā`ta*, "Look, my little (grand) child." Correspondingly, the term is used in the third person: *hiné k·ā'^{a}rec nā'k‘batsɛ tsiri'‘tseruk*, "This old woman her (grand)-son feared, it is said."

Some of the other words of this series are not so rigidly defined as to vocative or non-vocative use, though the above data give the preferential or at all events more common meaning. For example, Old-Man-Coyote's wife says, to a man *hiné xú^{u}tsk·ā`te áxpək*, "This little daughter marry" (imperative). On the other hand, an old mouse thus addresses Whirlwind-woman: *baríə di'a, dā'k‘bī`ə*, "My words execute, daughter," where it is also noteworthy that the pronominal prefix is lacking.

Illustrations of the use of terms taken from mythological material follow: *bac-bakā'te á‘tsipā`ri*, My children may they grow up. *barā'k‘ sas ō*, "My child soon bring (imperative). *darā'k‘e cik·ā' k‘ā` t‘-dək*, "Your child if it should be a boy." *dā'k‘batsɛ` ī' rə pū` rək*, "His sons there are two of them." *darā' k‘ bī` a darō're aráxpa?* "Your daughter you came and married?" *dā'k‘bī`əc xatsi'ək*, "Her daughter (obj.) she shook." *darā'k‘e áxpək á‘takāt awā'tsia*, "Your child (a grown-up daughter) with her close sit" (imperative). *axɛ', ham makú. irō'^{o}ce, cō'ritsim di warākā?* "Father, some give me. Son, when (did) you (become) my child?"

Yellow-brow calls Grasshopper's daughter, i. e., his wife's brother's daughter *xū'utse*. Young-crane calls her daughter's daughter by the same term.

A suspicion sometimes arises whether what from our point of view seems a grotesque misapplication of terms of kinship is not merely a theoretical exercise on the natives' part. But both among the Hidatsa and the Crow the apparently absurd connotations feature in everyday conversation. Reuben assured me that Bread (see diagram, p. 62) addressed him, i. e., his father's sister's daughter's son, as *axɛ'* not by way of a joke but as the normal mode of allocution. An even more convincing case came directly under my observation. A four-year old boy, Sunrise, actually called a two-year old girl, Good-skunk, his daughter. In reality, she is his mother's brother's daughter. I asked Sunrise, "*darā k‘bī' a cō?*" "Your daughter where (is she)?" He at once replied by puckering up his lips and protruding them towards Good-skunk. In other words, these to us strange applications are imparted to children, with others that seem normal to us, at a very early age.

According to Young-crane, a woman would refer to her brother's child as *macbā`pi'te.* This may be merely a retroactive effect of the freedom with which the Crow merge distinct generations, for the husband of the father's sister was not classed with the grandfather but with the father. Thus, Young-crane had an elder brother's daughter, whom she referred to as her grandchild, but who addressed Hunts-the-enemy, my informant's husband, as "father." A plausible reason for the classification of the brother's child with the grandchild lies in the classification of the mother's brother's child with the child: if the father's sister's son regards his cross-cousin as his son or daughter, it is not unnatural for the father's sister to regard this nephew or niece as her grandchild. My impression is that Crow usage, here as in some other respects, is not rigidly fixed,— certainly less so than among the Hidatsa.

Morgan's Crow schedules have a relatively high degree of correctness, most if not all of his terms being readily equated with those obtained by more phonetic methods of transcription and the meanings being also given with a fair measure of accuracy. Nevertheless, there are not a few errors due to his unfamiliarity with the language and sometimes to his failure to note the distinction between vocative and non-vocative use.

As generic terms for "my brothers" and "my sisters" Morgan gives the equivalents of *bāsā'pe* and *baku'pmī`∂*, respectively. The former expression has been found to extend far beyond the narrow family circle (p. 59), the latter seems to me a perfectly legitimate compound of *baku'pe* and *wī`∂* ("*Geschwister*" and "woman") but is hardly the usual generic expression for "sisters," for which I think *bacbī'∂* would be more commonly used (but see p. 60). In defining the equivalents of *bī'ik·a* and *basā'* ^{a}*re*, Morgan correctly notes the extension of these terms to elder parallel cousins, but wrongly makes the latter word stand for maternal uncle in male as well as in female speech. In the former case *bī' ik·a* is naturally used since *basā' are* is only employed by women. "*bä-cha-ka*" for "father's brother's daughter's son" is obviously only a misprint for *bä-chu'-ka*, which is correctly rendered to cover the younger brother and younger parallel male cousin in the speech of both sexes; and the sister's son and the mother's sister's daughter's son in male parlance. The father's brother's daughter being a "sister" according to the Crow system, her son is naturally in the class of the sister's son. Morgan limits *basā 'kā'*^{a}*ta* to the man's elder sister and parallel female cousin, while according to my data it is used by both sexes. The term he gives for a female's elder sister *bus-we'-nä* I can identify with nothing but *basbī'∂*, the generic sister term. It may be noted that its phonetic equivalent in Hidatsa is limited to male usage. *basō' ka*, being a female term, cannot be applied by a man to his sister's daughter, the corresponding *basa'tsī' ita* being the only permissible one. Morgan correctly defines this word to include a man's younger sister and female parallel cousins; curiously enough, he omits the meaning "sister's daughter," for his correctly given additional definitions "father's brother's daughter's daughter" and "mother's sister's daughter's daughter" are intelligible only through the extension of the term to the sister's daughter.

In the ascending generation Morgan gives only the vocative father term, thus obscuring the derivation of his (non-vocative) grandfather term. He errs in not restricting *axϵ'* to male speech and thus even comes to extend it to the husband's father. On the other hand, it is worth noting that he correctly makes it cover the relationship of father's sister's husband. *i'g·a'* is rightly defined, the extension to father's sister's son's wife following logically from the status of the cross-cousin. The only criticism to be made under this head is Morgan's failure to note that there is a non-vocative term generally corresponding to *iʽg·a′* but not embracing the paternal aunt and her female descendants through females. Morgan gives *e-sā-cheka* for stepfather; I never found the equivalent used except for the stepson. For the grandfather and all the other male relatives of his and higher generations Morgan has one word, *miru′px-isa`ʽke.* This we have seen to be only the non-vocative form of male parlance. Further, the extension to the mother's mother's brother is merely optional, and I suspect the same for the mother's mother's mother's brother. *masaʽkā′ are* is correctly defined.

In the first descending generation Morgan again fails to note the distinction between direct address and non-vocative usage. For the daughter he gives only an expression predominantly non-vocative, *dā′kbī`∂.* For "son" the form *bot-sa′-sä* is listed, the additional meanings being brother's son and mother's sister's son's son for both sexes, and sister's son and mother's sister's daughter's son for female speech. What Morgan himself evidently felt to be a word of the same stem, *botso′-ka,* is defined father's brother's son's son and mother's brother's son for both sexes, and father's brother's daughter's son for women. There is no warrant for this differentiation. Morgan seems to have got mutilated forms of the non-vocative *dā′kbatsϵ`*, which would cover all his meanings.

In the second descending generation Morgan fails to note that *macbā`pi′te* is restricted to non-vocative use. The meaning "sister's grandson (m. sp.)" requires explanation. The sister's daughter's son would logically be a sister's son, i. e., a younger brother, correlatively with the designation of the mother's mother's brother as elder brother. In practice, however, we have found this use to be optional, the grandfather term being sometimes substituted, and to correspond with this we may have the sister's daughter's son classed with the grandson. But this reasoning does not apply to the sister's *son's* son, for the sister's son is a younger brother, whence *his* son becomes a brother's son, i. e., a son, not a grandson. In agreement with this we have the classification of the father's mother's brother with the father. Morgan is more seriously at fault in his interpretation of the word *basbā`xi′∂* as sister's granddaughter, (m. sp.), and father's sister's son's son, father's sister's son's daughter, father's sister's daughter's son in the speech of both sexes. Indeed, the only correct meaning furnished by Morgan is "father's sister's daughter's daughter." His misunderstanding is in part due to his ignoring the distinction between the vocative and non-vocative for paternal aunt. *basbā` xi′∂* simply denotes, in non-vocative use, the father's sister and all her female descendants through females. It never designates a male relative; the son of a father's sister's son is a father's son, i. e., a brother, while the son of a father's sister's daughter is a father's sister's son, i. e., a father. The father's sister's son's daughter, being a father's daughter, is classed with the sister. Finally, *basbā`xi′∂* cannot be applied to the sister's daughter's daughter, who is a sister (cf. diagram, p. 62); but neither can it be extended to a man's sister's son's daughter, who is classed with the daughter of a brother, hence with the daughter.

TERMS OF AFFINITY.

Speaker's Generation. áxpe (non-voc.). Spouse. The stem means also "companion" "to marry," and "in the company of." For example, in a tale a man who kills an enemy with his mother's help is dubbed "Isaʽk-áxpa-rapϵ′c," "His mother-with-he-kills."

tsiré (non-voc.). Husband. This is the only specific term for this relationship, but like its phonetic equivalent among the Hidatsa it is regarded as something of a honorific designation. That is to say, its use suggests the permanence of the union; whether the Hidatsa idea is involved that the woman must not have been previously married, I am unable to state definitely.

u′ə (non-voc.). Wife. This is the specific term for this relationship.

The two preceding words are used with possessive or privative particles to denote the fact or the contrary of marriage. Thus, a man is asked *du′a-wìci,* "Are you married?" (literally, your wife is there one?) or *dua-wic-bicè,* "Have you ever been married?" or *an-dúa-wic-basé, dicbā′re sā′we?* "When you were married the first time, how old were you?" Of a woman it is said: *tsi′mbicik·*, "She is married," (literally, "her husband there is one," the final syllable of *tsiré* being contracted and assimilated to following *b*). In a song a woman is represented as saying, *batsímbicik·*, "I am married" and is told *datsi′netdē̆‘tk,* "You are as though without a husband" (net, privative).

bu′ ə ka (voc., m. sp.). My brother's wife, mother's brother's wife. This is clearly a derivative from the foregoing; the non-vocative is formed in the usual way (*e*).

bu′ə – wa + isé (m. sp.). My wife's elder sister. *wā* is the nominal prefix, *isé* means "old, big."

bu′ə-karic‘ta (m. sp.). My wife's younger sister; my young wife in a polygamous household.

bactsité (w. sp.). My husband's brother.

Nothing is more complicated than the Crow mode of designating these affinities, for there seems to be considerable latitude. Neither spouse ordinarily addresses the other by name, but this was sometimes used, probably only in the case of long-continued union. Gray-bull said that a good woman would call her husband by name, meaning she would have to be one whom her husband would not have cause to abandon for infidelity. Instead of the names, demonstrative or interjectional expressions are employed in direct address. *hē′ ha* is used by either sex in calling a spouse. The women also use *hira′* and more particularly *barū′aritsè,* which latter word I cannot satisfactorily analyze. A wife's sister is likewise addressed *hē′ ha,* and in calling her sister's husband she employs the identical word or *hirá.* She may also call her brother-in-law by name: "*dā′suə k‘ō rā′sasuk‘*," "Name that they call him." A woman similarly may call her husband's brother by name and he may use hers instead of *búəka,* but there are evidently optional modes of address: if he is older, she calls him *masā′ rɛ*; if younger, either *batsū′ka* or even *irō′ oce.*

The term *hē′ha,* as applied to a wife's sister, obviously refers to potential connubium for she is no longer so addressed when married to another man, her name being then used instead. She may also be called "So-and-so's wife."

In non-vocative first-person usage non-specific expressions often take the place of *batsirê* and *búa*. Thus, we may have the demonstratives, *ī′ wə ‛k*, *ī′mbe*, *ī′r ə‛k*, or combinations of demonstratives with generic expressions.

I was seated by Mrs. Plenty-hawk, whose husband had been telling me myths, when a visitor arrived and knowing what my business was inquired who was telling me stories. The hostess answered *ī′mbe*, "That one," her husband being at the moment some distance away and in motion. Ū′ciec's wife always referred to her husband as ē′‛k isā′‛ke, "that old man"; other women would use *batsɛ′* "man" in place of *isa′‛ke* and might substitute ī rə ‛k for *ē′‛k*. A man often referred to his wife as ē′‛k· (or ir ə ‛k) *bī′ə* "that woman." Corresponding expressions are in vogue for other relatives. Thus, a woman speaks of her husband's brother as *ē′‛k bactsite′*, "that my brother-in-law" and of her sister's husband as *ē′‛k tsirɛ′*, "that one's husband," and a man may refer to his wife's younger sister as *ē′‛k isō′ ᵒké*, "that one's younger sister."

A woman sometimes referred to her husband teknonymously, saying, "the boy's father."

bā′acī‵ (voc., m. sp.). My wife's brother, wife's mother's brother, sister's husband, sister's daughter's husband.

barā′ace (non-voc., m. sp.). Coextensive with the foregoing.

bakúa (non-voc., w. sp.). My husband's sister.

basbī′akaricta (non-voc., w. sp.). My brother's wife, literally "my young woman" (see p. 58).

Vocatively, the sisters-in-law may address each other by name; or the elder may call the younger *xū′ utse*, being in turn called *makú kā‵ta*, "elder sister" (see p. 60). Probably the other terms for sister are also permissible.[1] According to one informant, sisters-in-law of about the same age called each other *hī′ra*, "female comrade."

According to one statement, the wife's sister's husband is called elder or younger brother depending on seniority; according to another, he is not considered a relative but is called *barā′x* (cf. p. 60).

batc-iri′kuō is the expression used to designate the relationship between co-wives, the first syllable being the reciprocal prefix. (cf. p. 35).

The use of the above-mentioned terms of affinity is in some measure illustrated in the texts secured. In the myth of Lodge-boy and Thrown-away, the witch who afterwards kills the heroes' mother addresses her as follows: *hī′ra, datsíre bā′tsik‛ūt‛, cō′ot-da‵e*, "Female comrade, your husband when he comes home with his pack, what do you do?" In another tale when Mouse transforms Old-Man-Coyote into a mouse, Whirlwind-woman fails to recognize him: *tsiré-c arā'xta-tā're 'tseruk*, "Her husband she truly did not know, it is said." In the Old-Woman's — Grandchild myth, when the hero has killed his adoptive grandmother's husband, she informs him of his identity: *ē' 'k- dī'rupx'-isa''ka k'ōk'*, *bī watsirā'-k'*, "That your grandfather was, I my husband he was." When a dwarf asks a young man whether he is married, the reply is *bú a k'ar-ē' risak'*, "My wife now is pregnant." In a society's song ridiculing the rival organization it is said: *ā're-tatse'-we úə kurutsī'm, dúə hú'kawe*, "Straight-arm his wife took back, your wife let her come." A tyrant who has cruelly treated the hero of a tale attempts to placate him by saying: *bú akari'ctem ítsik·ā'cec áxpək*, "My young good-looking wife (in a polygamous household) marry" (imper.). In another story a woman is living with her husband, her husband's brother, and his sister. This fact is expressed as follows: *bī'ərək tsire' tsī ictsít'-bic-dək akúa-kāt'-bic-dək ku' kōrá'tseruk*, "A woman, her husband, also her husband's brother there was one, her husband's little sister there was one, also she was there." When a young man has had his will of a buffalo-cow, he addresses her *hē'ha*, "Wife!" The same word is used by a young man who has eloped with the wife of another. In the story of Coyote and his Daughter, the little boy announces his discovery of Coyote's identity with the words: *hiñe' warā'ace mirúpxe k'ōk'*, "This my brother-in-law my father is identical with." With reference to the boy's scrutinizing Coyote's face it is said: *irā' acec ī'se i' k·a-kā'ci-'tseruk*, "His brother-in-law's face he looked at very much, they say." The mother warns the boy: *irō' oce, dirā' ace ī'se dirútsiri*, "Son, your brother-in-law's face you might touch."

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[1] See Lowie, (c), 212.

Spotted-horse (see diagram p. 62) was Old-dog's brother-in-law, being his sister's daughter's husband.

Other Generations. The most important fact relating to other relatives by marriage is the reciprocal rule of avoidance obtaining between a man and certain of his wife's relatives. There is a generic expression covering all relatives who are shunned,— *ucɛ'* (plural, *usu'a*); with the first person the word becomes *bucɛ'*. Of course, vocative forms are out of the question for these tabooed affinities. U'ucìec, from a man's point of view, summarized the facts as follows: *bu'a isa'ké buruci' tūk'*; *bu' a icbatsɛ' u'ə burucítūk'*; *bu'a isā'ke burucít uk'*; *barā'kbī'ə tsiré burucítuk'*. That is, "Our wife's mother we avoid (i. e., neither look at her nor speak to her); our wife's brother's wife we avoid; our wife's father we avoid; our daughter's husband we avoid." These terms should be understood in the native, classificatory sense; yet apparently without including the more remote relatives of the wife; and the wife's grandmothers, on both sides should have been added, as indeed the informant remarked independently of his formal enumeration. On the other hand, the Crow differ from the Hidatsa in not including with the *ucϵ′* the wife's *isbā'xi′ə* (paternal aunts, etc.), who are not avoided and are classed with the mother. In polygamous marriage with unrelated wives, the taboo extended to the relations of all the wives. The rule of avoidance embraced the son-in-law's own brothers, as well as the son-in-law himself, but apparently did not affect more remote kinsmen.

The father-in-law taboo was also weaker than the rule for mutual avoidance between wife's mother and daughter's husband; nowadays it seems to have largely disappeared while the other taboos persist.

One-star, who was once married to one of Arm-round-the-neck's daughters, is now called "son" by his one-time father-in-law and treated accordingly, and One-star's wife is considered his daughter. One-star speaks to his former son-in-law, Leo Medicine-crow. In these cases, the dissolution of the marriage bond may be thought to have produced this effect. But this does not apply to the case of James Carpenter, who speaks freely to Flat-head-woman, his wife's father, but continues to shun his wife's mother, her grandmother, and her brother's wife.

A man may refer to his parents-in-law as *basxā'ri′ə* or *basbā'xaríə*, "my old one" or "my old ones." He may also designate them as "that woman's father" or "that woman's mother."

The rule of avoidance can be removed, usually after the wife's death, by the presentation of a substantial gift, and in this step either the son-in-law or the parent-in-law may take the initiative. In such cases a parent-child relationship is assumed.

Thus, Gray-bull gave Yellow-brow one or two horses and said, *barā′ke kō dī at'-di′ə wā' wik·*, "My child that you, too, I shall make you." Since then he spoke and smoked with him as though with one of his sons, but Gray-bull's wife was not affected by the arrangement. A wife's death and divorce certainly affected the taboo. Young-crane, after the death of her daughter, prepared her son-in-law through his father for what was coming, then gave him a colt, spoke to him, and since then has treated him as a son. She lives with him and takes care of her granddaughter. Yet sometimes horses are presented without a removal of the taboo. Gray-bull gave one horse to his father-in-law and another to his mother-in-law, but only spoke to the former thereafter. It is also strange that while Grasshopper now freely converses with Young-crane, his own brothers, White-hip and Cuts, who formerly shared the taboo with him, do not yet talk to the old woman without restraint. While they no longer shun her, they do not speak with her any more than is necessary.

Gray-bull said that since his wife's death he no longer shuns all her brothers' wives. "My wife was the reason I did not talk to them, so now that she is gone I talk to them." However, this principle is not consistently carried out. My informant still shuns his wife's own or closely related brothers' wives. He was successively married to five wives. After a divorce he would no longer avoid his former wife's mother.

There is no taboo between a woman and her parents-in-law, whom she treats as her own parents. She calls them *masā'ka,* "father" or *bas-isā' ʽke,* "my old man," and *masā ʽkê,* "mother," *bac-k·ā' are,* "my old woman," or *ī'rə ʽk k·ā' are,* "that old woman." On the other hand, *dā'kʽbīʽə,* "daughter" is used, certainly by the mother-in-law, and probably likewise by the father-in-law, in addressing the son's wife.

Morgan gives the easily recognized equivalent of *mī'rapàtse* as the word by which two fathers-in-law, i. e., the fathers of spouses, address each other. This is the usual word for "comrade, friend." The same author gives *há-nä* as the corresponding word for the relationship between the spouses' mothers. This must be a misprint for *hī'ra,* the usual word for "female comrade." It may very well be that such terms were used, since their application is generic and would simply express friendship or courtesy. The only relevant data I collected refer to the relations between parents-in-law of opposite sex. Gray-bull, whose son had married Young-crane's daughter (deceased), lived for years under the same roof with the old woman. They did not regard each other as relatives, yet treated each other as though they were. They were *i'∂-nakasu'a* (first person singular: *bi'∂-nakasϵ'*).

Owing to the extreme difficulty of the affinity terms used by the Crow, it is not surprising to find Morgan's schedules inadequate in some respects and misleading in others. It was natural that he should usually have obtained the specific terms rather than the non-specific modes of address. Sometimes his ignorance of the language is to blame. For example, the daughter-in-law (w. sp.) and sister's son's wife (w. sp.) are not denoted by a specific term when called *barā'ke* (*mä-nä-ka*), as Morgan's readers might conjecture, but by the generic expression for "my child." Similarly, *gä-na* in his *boo' sha-gä-na* is simply *kā'ᵃre,* the word for "old woman" suffixed to *bucϵ'.* Ignorance of the avoidance rule prevents him from explaining why wife's father, son-in-law, and so forth, should be designated by this common term. He also fails to include the wife's brother's wife in this category, giving *botze'-no-päche* for both her and the husband's brother's wife. I consider this incorrect, for his term seems to be the equivalent of *bats-ī'rapatse,* which means "one another's male comrade." Morgan fails to note that *bā'aci* is simply the vocative of *barā'ace* and translates the former "wife's brother," the latter "father's brother's daughter's husband, mother's sister's daughter's husband, and sister's husband (all m. sp.). For "husband" and "wife" he gives merely the non-vocative terms, being apparently ignorant of the impossibility of using these in direct address. For *bu'∂ ka* the classificatory extensions are correctly given, for since the sister's son, the father's brother's son, the mother's brother, and the mother's sister's son are all "brothers" (m. sp.), it follows that their wives must be designated by the same term as an own brother's wife. On the other hand, Morgan errs in defining *basbī' akaricta* (*bos-me a-kun-is-ta*). He correctly gives "brother's wife (w. sp.)," from which fundamental meaning follows, logically enough, the extension to father's brother's son's wife and mother's sister's son's wife (both w. sp.). But he also gives "daughter-in-law (m. sp.)," and "brother's son's wife" and "mother's brother's son's wife" for both sexes. This information is in a measure inconsistent, for the application by both sexes to the two last-named affinities would follow only from a term for "daughter-in-law" common to men and women, while Morgan limits *basbī′ akari‵cta* to male speech in this sense. The essential objection, however, is that I find no warrant for the use of *basbī′akari‵cta* except to denote a woman's brother's wife. It is, however, rash to dogmatize on the designation of Crow affinities; and I hasten to point out that etymologically the extensions given by Morgan are intelligible since the term signifies literally only "my young (but mature) kinswoman."

KINSHIP USAGES.

A few additional data have been secured on this topic.

The respect paid to each other by male brothers-in-law has already been emphasized. According to one informant, it is mainly the wife's brother that gives presents of horses, guns, etc., to the sister's husband, though the latter sometimes makes a return gift. The brother-in-law relationship was said to persist after the divorce of the connecting relative. On the other hand, by adoption into a society a "brother-in-law" might be transformed into a "son." This happened, e. g., when Gray-bull adopted Lee Scolds-the-bear into the Night Dancers' club. There is no objection to telling obscene myths in the presence of a brother-in-law, but personal obscenity must be avoided.

Female sisters-in-law did not joke with each other. A woman gave presents to her brother's wife. She would resent infidelity on the part of her brother's wife, and if she quarreled with her might prevail upon her brother to divorce her.

Young-crane declared that she had exactly the same feelings for half-brothers and half-sisters as for full *Geschwister* and that it made no difference whether the relationship was through the father or the mother.

In general it may be said that whatever differences of sentiment persisted with reference to differently related individuals designated by the same kinship term there was a conscious effort not to let the fact color one's practical conduct. It seems that a Crow regarded it as a matter of honor to treat, say, an adopted child as well as his own children,— if anything, better. In Crow folklore the wicked stepmother does not play the part she assumes in European tales, and though I recall a story in which a cruel stepfather figures this is an isolated instance.

MARRIAGE.

A man had a preëmptive right to the younger sisters of a woman he had bought in marriage. Some men married a brother's widow; this was called *u′ak-kura‵* + *u*, "keeping a brother's wife."

As explained in my previous paper,[1] there was abundant opportunity for philandering on such occasions as berry-picking (*amatdi′ aritskisu‘a*) and it happened that young people would form a permanent attachment on such occasions without further ceremony. This type of union was called *bats — ārá + u,* "taking each other." Sometimes a young man used a go-between to make an offer to a young woman, and this was designated as *bī′∂-kus- irá + u,* "talking towards a woman."

The most honorable form of marriage was buying a wife, *ī′wiciru‘ a,* "paying for her." That is, a man would give horses to her male relatives (*ic-batsϵ′o*) and meat to her mother. It was usually a young, good-looking and virtuous woman who was purchased but it did not matter whether she had been previously married. "Men," said Gray-bull, "would buy a woman who was not crazy. The Lumpwoods never came to the door of my tipi to take away my last wife. That is the sort of wife we paid for." This is an allusion to the custom by which a member of the Lumpwood or rival Fox organization might carry off the wife of a member of the other society provided he had ever been on terms of intimacy with her.[2]

Women stolen in this fashion were not usually kept for any length of time. Shell-necklace abducted three women in this manner but did not live with any of them longer than twenty days. He let them stay in a lodge other than his real wife's. There were some men who would keep these stolen women but the majority sent them away with such words as, *kan-dī + awáxpc, barē′ tk‘, kanā′!* "I have done marrying you, go away!" After this any man might marry her without being disgraced, except the husband from whose lodge she had been stolen.

When a woman abandoned a man she disliked, this was called *batsϵ′ — kurupi‘u,* "disliking a man." Shell-necklace said, contrary to Gray-bull's earlier statement, that in such a case the husband recovered the property he had paid for her. A woman's relatives sometimes tried to dissuade her from running away from her husband.

The attitude of divorced spouses towards each other in later life naturally differed with different individuals. One interpreter told me that his father and mother hated each other and never had any social intercourse. Correspondingly, Young-crane informed me that she at first refused to be adopted into the Tobacco society by her former husband, Hunts-the-enemy, but was finally persuaded by her then husband, Crazy-dog. On the other hand, there are cases of divorced mates who converse on amicable terms.

Some concrete data as to married life are of considerable interest.

Young-crane married her first husband, a chief, before her first menses.

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[1] Lowie, (c), 220 et seq.

[2] Cf. Lowie, (d), 169.

He had already married her elder sister and at the time of his death had two other wives,— one of them a relative belonging, like the informant, to the *a`cbatcúə*. The three related women inhabited the same lodge, while the fourth wife lived in a separate tipi; but sometimes all the wives of a man, even if unrelated, lived together. This first husband had been married to a wife whom he divorced and by whom he had four children. When he took to wife Young-crane, he gave her elder brother two horses and other presents. She had no children by him, but her elder sister had three, of whom Packs-hat is the oldest. He has always called Young-crane "mother"; when she later married Hunts-the-enemy, Packs-hat called him "father," as he also did his own mother's second husband; he continued to address Hunts-the-enemy in this way even after Young-crane's divorce from him, and later when she married Crazy-head called him "father" also. Young-crane's first husband was killed and after awhile she had Hunts-the-enemy for a lover and accordingly married him without purchase. However, he also took to wife a relative of Young-crane's whom she designated as her grandchild (*macbā`píte*) and who called her husband "father." This angered her. All the people thought Hunts-the-enemy had done something wrong in marrying a girl who called him "father" and said he was crazy. Accordingly, Young-crane separated from him. Later Crazy-head wished to marry her, and since he was a chief her brothers advised her to take him, and so she did without being purchased.

When Gray-bull was about twenty-two, he married for the first time. He had been out on a war party and when he came back he found a young woman who had come to his home, so he married her. She had a son by him, but the boy died. After about four years of marriage, she discovered that her husband had been out berry-picking with another young woman, so she got angry and told him to marry her rival. Accordingly, Gray-bull threw all her belongings out of the tent, and she left him. Then Gray-bull went to where his sweetheart was and married her without purchase. She was stolen by the Lumpwoods and Gray-bull never went near her for a year, and even then he did not seek her but she came to him. However, he did not keep her permanently. It was only for his last wife that property was paid. She was a virtuous woman, the widow of a brother of Gray-bull's, who had been killed. When Gray-bull's mother urged him to marry this woman, he at first declined, but at last consented. Then another brother of his took a horse and some property to the widow's mother, the horse being for the widow's father and the other gifts for her brothers. Some time after this one of the woman's brothers bade him stay in his lodge. Then one of her brothers came, stood outside the tipi, and called Gray-bull. Then he went with them and two of his own brothers to the woman's lodge. She was seated on a fine bed and had a backrest there. Gray-bull's brothers went to the rear and sat down, and all of them received food. When they had eaten, the brothers went home and Gray-bull remained and lay with his wife. He felt bashful because she had not been his mistress before.

Position of Women.

The fact that the women certainly perform all the menial household duties and are ordered about by their husbands in regard to bringing water and the like is likely to convey the idea that the position of women was a very inferior one in Crow society. Random references to women in myth and song, and indeed the deliberate bravado with which the ideal Crow man might discard his wife at a dance or allow her to be abducted by a rival organization, tend to confirm this impression.

Nevertheless, as in the case of sexual morality, superficial appearances are in a measure deceptive as to the real native point of view. In the first place, it is worth noting that a woman exercises definite property rights. In buying specimens I noticed repeatedly that husbands did not attempt to influence, let alone force, wives in regard to the sale of their belongings. It is further noteworthy that while women were naturally barred from the distinctively military men's clubs they play an important part in the sacred Tobacco society. Women secured visions, though less frequently than men; and some of them were medical practitioners and exercised supernatural powers. As the Crow had a very definite conception of ideal manhood, so they have a clear notion of what a woman should be,— virtuous, skilled in feminine accomplishments, physically attractive. This complex is summed up in the expression *bī ītsik*', "She is a good woman," which perhaps corresponds to our "perfect lady" with the addition of good looks. A woman of this type was certainly well thought of and might exert considerable influence on her husband.

It is further clear that the bold face put on when a woman was abducted often merely served as a mask for profound grief. Indeed the stoical decorum so emphatically demanded by tribal etiquette indicates how difficult an achievement this triumphing over one's emotions was considered. When Gray-bull lost his wife in the spring contest of the Foxes and Lumpwoods he bravely bade her go with his rival, but interrupting his narrative at this point he said to me, "If you have ever been married, you know how this felt."[1]

Whether what has been called "romantic love" is less common among the Indians than in our own everyday life, it would be difficult to say. An educated interpreter ridiculed the notion of a man's committing suicide because of unrequited affection, but Werthers are not so common among us as he seems to have inferred from a reading of novels. At all events, Crow literature also comprises narratives of a hero undergoing dangers and achieving arduous tasks "all for the love of a lady," while one story recounts how a young woman braved all the perils and privations of a long overland journey through hostile territory in order to reach her disabled sweetheart.

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[1] Lowie, (d), 171.

SEXUAL MORALITY.

In his discussion of the social life of the Yukaghir, Mr. Jochelson emphasizes the difference between theory and practice as regards the sexual relations of this people.[1] Exactly the same point may be made with regard to the Crow. In practice there is great looseness of manners, though the established rules of propriety are strictly observed.[2] War and love are described as the old Crow men's principal occupations, and the mythology, the reminiscences of informants, and ancient songs are all surcharged with evidence of the tendency to apparently unlimited philandering. To a superficial observer it would appear as though this masculine license were even today extended to the female sex. Young women of notorious immorality are not only not regarded as outcasts but in some instances are even taken to wife by young men who to all appearances might have made better matches. Their outward treatment, whether they are married or not, seems to differ not one whit from that accorded to other women.

Nevertheless, as already explained, the Crow have very definite ideals of feminine purity. A man certainly prides himself on being married to a woman of irreproachable chastity, and a wife of this type enjoys a very different reputation and social status from that of a "crazy" one, as unchaste women are usually described. On public occasions precedence was yielded to the virtuous women. When Young-jack-rabbit had distinguished himself in battle, his grandmother, who "had never done anything wrong," led him about camp and sang his praises. During the Sun dance the highly honorary office of tree-notcher was bestowed on a woman who had been taken to wife in the most honorable way, i. e., one who had not run away with her lover but had been decently married by purchase, and who had been uniformly faithful to her husband. Chastity was likewise a prerequisite for another office in the same ceremony.[1]

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[1] Jochelson, 62, 65.

[2] Thus, my interpreter twitted me with the fact that while whites censured the Indian's immorality a brother would not hesitate to speak freely with his sister, which no decent Crow would do (see p. 38).

There can be no doubt that even theoretically there was a double standard of morality. No one thought any the worse of a man of prominence for having indulged in numerous love affairs: these were rather regarded as his rightful share of the good things of life. When a young man had assumed the especially dangerous office of a Crazy Dog,[2] an old man would lead him through camp, announcing that since he was going to die the girls of the tribe who wanted to become his sweethearts must hasten to make overtures to him. One of my youngest interpreters, who had recently been married, would speak quite freely of the possibility of amours with other women, but he became grave in considering the case of his wife being disloyal. "Do you know what I should do?" he asked me; "I should never look at her or have anything more to do with her."

That, however, a certain preferential respect was accorded to a man of virtue is shown by another Sun dance usage. An expedition for the purpose of bringing white clay was always led by a man who had never taken liberties with any women but his own wife, even in the case of licensed privileges.[3]

PRIVILEGED FAMILIARITY.[4]

Some additional details were obtained regarding the joking-relationship.

If a person's mother had a second husband, her children regarded the clan children of both their own and their stepfather as *ī'watkusu`ə*. Thus, Gray-bull treated as in this category both the children of birik·ō'oce men (his own father's clansmen) and of *acitsîte* men (members of his stepfather's clan).

Ū'uciѐc has One-star for one of his joking-relatives. He would abuse him as follows: *dī wirə xbā'k' xawī' k·; bacō'' di` ə ra, dī wirəx bā'k' xawī'k·;* "You are a bad person; whatever you do, you are a bad person." If a war party returned unsuccessful, the *ī'watkusu`ə* of the warriors made fun of them. Ū'uciѐc explained that after the hair-cutting performance there was no more licensed joking (*icitsē'cua*) between the persons concerned for the rest of their lives: *kàm-bat-ictitsē'cē-su-k,* "They did not joke any more." The joking-relationship includes people of opposite sex. Old-dog would chide a female *ī' watkusu`ə*, saying *dī wā` warāx', dī rōka'sak',*

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[1] Lowie, (e), 30, 35.

[2] Lowie, (c), 193.

[3] Lowie, (e), 42.

[4] Cf. Lowie, (c), 204–206, 214 f.

"You are a crazy one, you are lecherous." He would say this whether it was true or not, in reply she would call *him* crazy or abuse him in some other way.

My earlier statement that children of men belonging to linked clans were also *ī′watkusu*‵ə stands corroborated. Gray-bull illustrated this specifically by the case of children of men of the acitsíte and acirārī′o clans. This extension, however, leads to an interesting possibility. Since a man was not prohibited from marrying into a clan linked with his own, it was possible for his children to be his joking-relatives. Thus, Bull-tongue is an àcirārī′o, while his father was acitsíte. Bull-tongue and his daughter accordingly both have fathers of the same phratry and accordingly the young woman would be privileged to treat Bull-tongue and his clansmen as *ī*‵*watkusu*‵ə. This, however, is entirely contrary to the notion that the father's clan must be treated with special respect. My informant was of opinion that in such a case a little joking might be permissible, but not the usual form of license.

As explained elsewhere, "brothers-in-law" were treated with great respect, and especially the real brother-in-law, i. e., the wife's own brother and *vice versa.* However, the more remote brothers-in-law were sometimes mocked in connection with war exploits. Thus, Old-dog will say to White-man-runs-him, who is married to one of Old-dog's clan sisters: *dúxiraréretk*‘, "You have never been on a war party." White-man-runs-him responds in similar fashion. Gray-bull joked with Scolds-the-bear, but the latter was afraid to return in kind because of Gray-bull's superior war record. Under no circumstances is there obscene joking with any member of the "brother-in-law" group.

A man has the privilege of treating with the greatest license his brother's wife and his wife's sister, even if the latter should be married. He might raise his brother's wife's dress, exposing her, and she might do the same to him. A woman might also take liberties with her elder sister's husband. In the summer of 1916 I spent considerable time in the camp of an informant, who was continually teasing and fondling his wife's younger sister, while she returned this treatment in kind. They took the greatest liberties without regard to my presence or that of my informant's wife or that of his adult son by another marriage. According to Gray-bull, this type of familiarity ceases, however, when the wife's sister marries another man. For example, he himself continued speaking, but no longer played and joked with a certain woman after her marriage to Horn.

ETIQUETTE.

When a visitor comes to a tipi, the host may say *kahe′* by way of greeting, and this interjection is also used in addressing supernatural beings in prayer. If the inmates of the lodge happen to be outside they may say to the guest, *birē′ri′*, "Enter." He is made to sit in the *acō′ria,* i. e., the rear of the lodge, the place of honor. If a woman is visited by her husband's wife or an adopted child, she bids them sit in the rear; other female visitors sit anywhere.

A man does not enter a lodge if his sister or brother-in-law or any of the wife's relatives comprised under the term *usu′a* is there alone. If he finds any woman alone in a lodge, he is not likely to enter unless she is a sister-in-law; and correspondingly a woman does not enter a lodge where she sees a man by himself unless he be a lover or a relative other than a brother.

If a visitor comes with his wife, they take seats opposite to the host and his wife, but if that side is occupied they go to the rear. When they have no visitors, a couple usually occupies the place where the blankets are spread for sleeping, generally on the sides (the part of the lodge called *i'cg·ewatsúa*).

No matter at what time of day a visitor arrives, food of some sort is at once offered to him or her. In the old days this consisted mainly of pounded meat (bā′ndatsia) or something of the sort. It was not obligatory to eat up everything; sometimes a visitor would take home what was left. This was considered perfectly proper: *arī′pdetk,* "It did not matter." Sometimes a guest would ask for a container in which to take the food home. The hosts do not have to eat at the same time with their visitors. In the old days the people ate when they were hungry.

I have myself had occasion to observe again and again that guests do not usually eat in the immediate company of their hosts even if all partook of food at the same time. The usual arrangement is for each family to eat by themselves. Sometimes my interpreter and I ate separately from the other people; and almost always every man formed a distinct group with his wife and children, so that on some occasions there were as many as four groups. Once Bright-wing was seen to join Magpie and his wife, which Gray-bull explained by saying the former was Magpie's brother.

When people meet outdoors, they do not use any expression corresponding to our passing the time of day but will probably ask, *cō′ k'ararō'*, "Where do you come from?" or *sā′p díðra,* "What are you doing?" On my return to the Crow Reservation one summer, an Indian greeted me with the remark: *di awákam, mi itē′k·*, "I am glad to see you" (literally, I see you, I am better). On a similar occasion a Crow said, *hiñe′ batsē′k·ā'tec karahu'-tsitsē'k·*, "This dear man has come, it seems."

Crow men do not kiss their wives or sweethearts publicly; only young children are kissed in the presence of other people. However, I have seen a newly married young man caressing his wife though without kissing her.

In referring to a deceased person, particularly if related to one present, it is customary to use a euphemism, saying not *kara cē′ k*, "He is dead," but *k'orḗsak*, "He is not here." Thus, e. g., my interpreter designated Gray-bull's dead wife in speaking to her husband.

A man often refers deprecatingly to his own achievements, but this is mock-modesty and he knows perfectly well that his audience is perfectly aware of the facts. Once Gray-bull, in spite of his excellent war record, adopted this tone, saying, "I have never done anything in war." Young-crane, his son's mother-in-law, fearing that I might misunderstand, at once explained that Gray-bull was a very brave man indeed.

Social Estimation of Individuals.

In his little book on *Anthropology* Doctor R. R. Marett has rightly emphasized the importance of individual differences even in the most primitive society. This fact, which has been repeatedly observed by field-workers, is certainly very noticeable among the Crow. It appears, e. g., in the contrast between the abstract-like version of a myth, or the colorless account of an actual happening, furnished by one informant and the graphic narrative of another. The point I should like to make in this connection is that the Indians are quite conscious of these individual variations, and further that the place occupied in society by a man as a result of his individuality depends not merely on his qualities but also on the traditional sense of values.

So far as the ancient Crow are concerned, prestige depended primarily on martial glory. Though the Government recognizes Plenty-coups as chief of the Crow, the natives who still cling to the old ways generally regard Bell-rock as the foremost Crow,— in spite of the fact that he has not been at all prominent in dealings with the United States. The point is simply that in his record for war exploits he is the foremost of living men. In the estimation of the Crow he therefore takes precedence of Plenty-coups and Medicine-crow, though both of these likewise have an excellent score to their credit. On the other hand, it is quite impossible to make the people yield homage to a man who has not attained the full status of a chief in the customary way. Thus, White-man-runs-him has gained a certain amount of celebrity among whites as the sole survivor of the Custer party and has served as a member of delegations to Washington. Nevertheless, no one recognizes him as a chief. When he acted as crier at one of the July festivities some years ago, one of the other Crow pointed him out as an example of the degeneration of tribal standards. "In the old days we should not have picked out a man like him to serve as herald."

This one-sidedness, of course, prevents adequate recognition of men who in other societies might enjoy an enviable prestige. This came home to me with special force in the case of Bear-crane. Bear-crane had repeatedly acted as my informant, being apparently both unusually intelligent and remarkably well-posted in every subject of ethnographic interest. Yet while I was investigating the Sun dance with his aid, I was repeatedly warned to place no reliance on his statements because of his utter untrustworthiness. This led to a very careful checking of his data by my chief interpreter, James Carpenter, and in practically every instance Bear-crane's accounts were found to be corroborated by tribesmen of unexceptionable veracity. The psychology of the situation only became clear when I ascertained Bear-crane's war record, which was very poor and which apparently he had foolishly attempted to doctor in the customary recital of coups. He thus acquired in addition the reputation of mendacity, and whenever I mentioned him to other men his name was at once pooh-poohed. We have here, then, a sociologically instructive instance. A highly gifted individual receives no recognition in his social setting and is impelled to make an abortive attempt at getting a position from which he is barred by the rigidity of the native canons.

The notion that it was a man's duty to be brave sometimes found exaggerated expression, as among the Hidatsa, in the form of the theoretical view that it was proper to die young. Thus, an elder brother might force a younger one to assume unusual obligations of bravery not from malice but in order to shed luster on his name.[1] The same sentiment is expressed in the following song:—

bak'ō′ tsi'te	awáxe	awē′-rək.	bāxariá	kawá-uk'.
Eternal	(is) the heaven	and the earth.	Old people	are bad.
batsiri′ rεta.				
Be not afraid.				

This general point of view is illustrated by the actions of the Crazy-dogs-wishing-to-die,[2] who were not merely brave but foolhardy, deliberately courting death. It should be noted that the reason why Isacpi′tdakc, one of the most famous of these men, became a Crazy-dog was because a sore knee prevented him from joining the foot-soldiers in their war raids. In other words, the impossibility of satisfying the normal ambitions of a Crow warrior made life unbearable and drove him to assume the unusual obligation of recklessness. The respect which such conduct elicited is exemplified by Spotted-rabbit's case. After becoming a Crazy-dog, this warrior became the lover of Two-faces' wife. Two-faces, so far from resenting this as an injury, viewed Spotted-rabbit as his irúpxek·āʽte (see p. 63) and even sought to avenge his death.

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[1] Lowie, (d), 166.

[2] See Lowie, (d), 193–196.

In latter-day Crow society the principal means for distinction has of course become impossible. It has been supplemented partly by other qualities esteemed in former times as secondary attributes of eminence, such as liberality, partly by characteristics displayed in dealings with the Government officials. Those who attempt to curry favor with the authorities or missionaries to the detriment of their own people lose caste, and to a lesser extent this applies to men who, while ostensibly defending their tribesmen, are suspected of being mainly actuated by motives of self-aggrandizement. On the other hand, those who combat without afterthought what the Indians regard as injustice, even subjecting themselves to punishment on behalf of the rest, are highly esteemed.

Women are held in repute for such qualities as chastity (cf. p. 77), skill in feminine handicrafts, and kindliness.

Apart from the evaluation of personalities *in toto,* the Crow are keen in recognizing differences in point of special endowments or temperament. Thus, No-horse (*burɛ′-sac*) was pointed out to me as an unsurpassed master in the use of the Crow language. He will get up in an assembly, I was told, and employ words which no one has ever heard before yet which are at once understood and felt to be perfectly correct. On my second visit to the Crow, I was advised again and again to use as an informant Old-horn, who was described to me as an incomparable historiographer of his tribe. After possibly two weeks' arduous attempt to extract desired data from him, I was obliged to give him up as a hopeless case. He had never been a member of the Tobacco society and on most other aspects of aboriginal culture he spoke as an outsider. Whence, then, his reputation? He actually did possess a remarkable memory, especially for relationships and had proved very valuable to the Indian Office in aiding the adjustment of the native matrilineal scheme of inheritance to the laws of the United States. Ignorant of my precise aims and knowing his preëminence in this particular branch of aboriginal knowledge, my advisors had quite sincerely directed me to him.

As a social characteristic the ability to exchange good-humored raillery is highly prized. This is markedly noticeable in the intercourse with whites, where umbrage is taken at any appearance of putting on airs.

Some people become popular as purveyors of entertainment. Among these is White-arm, who was described to me as "a regular clown." He picks up threads of gossip and retails them to interested audiences, which are convulsed with laughter at his topical narratives. Things which never appeared funny before become comic under his treatment. Two of his favorite tales of this order were recorded as texts and wherever I read these to groups of Indians I always produced inordinate merriment. Of late White-arm has become less popular because of his association with one of the Protestant missions.

The loss of social prestige is naturally connected with the absence of the prized qualities, but as bravery is associated in the native consciousness with certain specific deeds, so disgrace is correspondingly the result of certain specific actions which are conventionally considered contemptible. Offenses of this sort become preëminently the butt of the *ī′ watkusù∂*, and the natives' extreme sensitiveness to ridicule renders the joking-relationship a very genuine corrective influence.

One of the things to which the Crow are strongly averse is a personal brawl among tribesmen. They will sometimes contrast their attitude with that of the whites who exchange blows when at loggerheads. "The white people all want to be prize-fighters," one of my interpreters said to me. Gray-bull told me there was just one bad thing scored against him in the tribal reckoning,— a fight with a Crow chief. His tale runs as follows: —

> We were camped on the Yellowstone. The Arapaho were at Fort Custer, the Cheyenne at Rosebud. The Arapaho were friendly. I went hunting and got to the Arapaho. Some Arapaho told the Cheyenne that a Crow was in the Arapaho camp. The Cheyenne came and wanted to kill me, but the Arapaho chief would not allow it. One Cheyenne, whose son had been killed by our people, said if he could not kill the Crow he wanted to whip him. So the Arapaho took away all his weapons except his whip. I went up to him. He began to whip me. He whipped me until I no longer felt it. The Cheyenne was crying while he whipped me. At last the Arapaho chief bade him stop.
>
> I crossed the Bighorn and went down the other bank. The whole Crow camp was coming across. When they had crossed, the Cheyenne were on the other side of the river, but did not cross in a body. One of them, however, crossed, riding a black horse and wearing a two-tailed war-bonnet. I said to the Cheyenne, "I told you not to come across." I went up and whipped him so hard that the feathers of his bonnet fell off. When I got through whipping him, I returned to the other Crow. The chief of the Crow came up and asked me what I was doing. "They whipped me first, that is why." The chief said, "It is nothing if they whipped you, you are no good any how." I said nothing. The chief began to whip me. Now all the Cheyenne had crossed. He whipped me for a while. When he had done, I told him he was crazy and asked whether the Cheyenne were his brothers and why he took their side. I told him that was a good day to die. The chief asked me whether I wanted to die. "Yes." I took a stick and hit the chief on the nose. He just stooped over and I beat him with the stick. Another chief, Long-horse, came and told me to

cease,[1] I ceased and stood there. I had two pistols; one I was holding loaded under my breech-clout. I waited for the chief to say something. He recovered from his nose-bleeding, then he told me he was going to kill me. I took out my pistol from under my breech-cloth, but someone knocked up my arm and I shot over the chief. The Indians seized both of us, and separated us. After that I felt so badly that I did not know what to do. I said I was going to kill one of the Cheyenne, but the rest of the Crow would not let me go. The Cheyenne cheered while I was being whipped by the chief.

After this incident Gray-bull's joking-relatives made fun of him. The men would say, *ē'ʻk barɛ' ditsī'*^{i}, "That one may strike us." The female *ī'wat-kusuʻ* would also give warning of his approach, "There's that fighter, (*ē'ʻk bāʻwurutē'c*); get out of his way, he might hit you."

The case of Fire-bear, an Agency policeman who killed Wraps-up-his-tail, the sword-bearing prophet (about 1888), was naturally regarded as far more serious. He was considered crazy for killing a fellow-Crow and when he approached everyone, whether a joking-relative or not, would say: *ham-di-rapéo, mitā'xare,* "He might kill some of you, get back."

As liberality is considered a great virtue, miserliness is regarded with contempt. Thus, it is considered bad if a man takes home a horse he has given away to a brother-in-law or some other person. This is called *bāʻk-ʻurutcité.* If a hunter who had killed deer or buffalo did not give any of the food to another Crow who came upon him while butchering, his stinginess was derided. People would say to him, *irúk arátsicik·*, "You love meat." If a horse was always kept by a man until it was very old without being given away, this was not so bad, still people would make fun of the owner.

It was considered bad for a man continually to beat his wife without cause. People would talk about it, saying, *bī'ə rit'ə'kʻ*, "He beats his wife." If a party of Crow approached the enemy who stood their ground and if the leader then turned aside, the people made mock songs about him and compared him to a "bleeding woman" (*bī ī'maxuə*). This was, of course, a stinging reproach.

One of the worst things a man could do was to take back a divorced woman or one who had been abducted by a rival society.[2] Such conduct, called *bī'ə warā'x kʻurá + u* (keeping a crazy woman), was regarded as truly disgraceful. People would say to an offender, *dī' ise rítcik·*, "Your face stinks." Flat-dog, Old-dog, Arm-round-the-neck, and Yellow-wolf are among those who transgressed the rules of propriety in this manner. People still hold this against them, and their joking-relatives throw it in their teeth, saying, "You smell a vulva." Though Arm-round-the-neck is a chief, they say this to him.

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[1] This is probably a famous warrior of that name whom the Crow frequently mention for his extraordinary valor.

[2] Lowie, (d), 169.

CONCLUSION.

Before entering into a comparison of Crow and Hidatsa social life, a few words seem in place regarding the general culture of these tribes. While probably every department of thought and customs presents some evidence of the former unity of these tribes, there are also noteworthy differences which may perhaps best be summarized by the statement that the Hidatsa enjoy a far richer culture than their western congeners. Economically, they were not merely buffalo-hunters but also hoe-agriculturists and in connection with this feature they inhabited, for part of the year, settled villages of earth-lodges. They were (and to some extent still are) conversant with the arts of pottery, basketry, and matting, and cross the Missouri in the oft-described bull-boats, all of which features are unknown to the Crow. Ceremonially, the Hidatsa have an abundance of rituals associated with sacred bundles, to which there is likewise no parallel among the Crow. Finally, while the published mythological material from the Hidatsa is not adequate for a thorough-going comparison, it is surprising how often a Crow narrator gives to his tales an Hidatsa setting, the implication being that at least some of these stories were borrowed bodily from the Hidatsa stock of tales. That such transfer occurred in the case of certain dances and organizations is an historical fact. We may assume that much of the relative complexity of Hidatsa life is due directly to Mandan influence or at least indirectly to the stimulation received by contact with them, though we cannot trace in detail what was borrowed and what was transmitted as a result of this intercourse. The culture of the Hidatsa differs from that of the Crow not merely by the greater number and elaboration of discrete features but also in a marked trait of their social psychology,— the tendency towards rationalization and systematization. The Crow child, for example, seems to have grown up largely without formal instruction. Even on so vital a matter as the securing of supernatural favor, the adolescent Crow was not urged by his elders but came more or less automatically to imitate his associates: others had obtained benefits through visions, hence he also would retire into solitude in expectation of a revelation. With the Hidatsa everything seems to have been ordered and pre-arranged by parental guidance: the father repeatedly admonished his sons to make appropriate offerings and obtain the requisite ceremonial articles, at the same time giving them specific instructions. The desire to account for cultural phenomena is likewise very much more highly developed among the Hidatsa. Though the tales accounting for the origin of the exoteric military organizations certainly do not show Hidatsa speculation at its best, they contrast favorably with the bald statements or total lack of statement by the Crow. In accounting for their sacred rituals the Hidatsa, like the Blackfoot, largely draw on folk-tales for the incidents supposed to have led to the institution of their ceremonials. Nothing comparable was observed among the Crow: the origin of the chapters of the Tobacco order, for example, is associated with specific visions but not with a definite plot. It does not matter whether we assume that the Hidatsa tales were evolved in order to account for their rituals or were secondarily utilized for that purpose: in either case a distinctive trait must be recognized. They must be acknowledged to reveal, at least in this department of thought, either a superior degree of inventiveness or a superior capacity for coördinating and synthetizing disparate elements of their culture.

Associated with this tendency to rationalize and systematize there is naturally far greater rigidity, much less variability in individual interpretation and conception. The names of the Crow clans, for instance, have clearly changed considerably in the course of time;[1] those of the Hidatsa appear to have been immutable, there being no suggestion of other designations than those listed above and already recorded by Morgan. Versions of Crow myths sometimes differ as widely as if they were collected among distinct tribes. Among the Hidatsa I think there is far more conformity to type, and though my experience in taking down their stories in the original is very limited I received the impression that even in the phraseology employed there was a markedly greater tendency to preserve a traditional form. This seems to me to hold quite generally. If one inquires whether Old-Man-Coyote and the Sun are identical or whether Old-Woman's Grandchild was ever addressed in prayer, one receives diametrically contradictory replies from equally trustworthy Crow natives, which is hardly likely to occur in parallel Hidatsa instances. Even in the application of kinship nomenclature, where a certain fluidity is probably universally found, the Hidatsa are more consistent than the Crow, as may be shown by comparing the applications of the grandchild term and the designations of the mother's mother's brother. It is true that my personal acquaintance with the Crow is much more intimate than with the Hidatsa and that any expression of opinion on the latter must be weighted accordingly. Nevertheless an impression of contrast so definite and apparently so abundantly supported by concrete facts can hardly be without an appreciable element of justification.

To turn now to a comparison of social organization and customs. The fact that the Hidatsa and Crow clans do not coincide in name is hardly surprising in view of the constant change of designation among the Crow in historical times. What is more important for our purpose is the complete coincidence of the clan concept. This appears in the proper light only when we consider certain facts of distribution and some correlated phenomena.

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[1] Lowie, (c), 190 et seq.

In the first place, we should note that, apart from the Mandan (whom we may ignore for the present on account of inadequate information), the Crow and Hidatsà are for a radius of hundreds of miles the only tribes having exogamous divisions with maternal descent. Eastward the Wyandot and Iroquois, southward the Navajo and Hopi, westward the Tsimshian and Haida are the nearest peoples divided into mother-kins. The clans of the Hidatsa and Crow differ from other clans, first of all, in type of name, which is almost uniformly non-totemic and among the Crow belongs clearly to the nickname order. Secondly, they differ from those of the Eastern and Northwestern tribes in wholly lacking sets of honorific individual names. Thirdly, they are not connected with crest privileges of the North Pacific Coast type nor Hopi-fashion with any ceremonial duties or prerogatives. In short, beyond those traits involved in the definition of an exogamous mother-kin the Crow and Hidatsa clans share no traits whatsoever with the clans of the other tribes.

The contrast is still more striking when correlated traits are compared. The avunculate is highly developed among the North Pacific Coast tribes and the Hopi but no trace of it appears among the Hidatsa and Crow, nor do we find the women prominent in political activity as among the Iroquois. On the other hand, the Crow and Hidatsa share a conception of the relations with the father's clan which to my knowledge is unique. Some of the relevant traits have parallels elsewhere; but so far as I know, no other tribe has developed the notion to such an extent as both the Crow and Hidatsa that the father's clans-folk are preëminently the people to receive gifts; none defines the joking-relationship through paternal clan connections; and nowhere else are nicknames derived not for one's own actions but from those of a father's clansman. Finally, we must mention in this connection certain significant resemblances in kinship nomenclature. Unlike probably all other North American tribes, there is no uncle term in either language, the mother's brother being classed with the brother. Associated with this classification within the mother-kin we find a characteristic designation of cross-cousins, the maternal uncle's children being placed in the first descending and the paternal aunt's in the first ascending generation. The application of a single term to the paternal aunt and *all* her female descendants through females, regardless of generation, proves to my mind that we are here dealing with a clan phenomenon; especially since various Siouan tribes with paternal descent show a characteristic difference intelligible only by the different rule of descent. It is true that the cross-cousins and the female descendants of the paternal aunt are designated by the Hopi in the Crow-Hidatsa fashion; whence the argument might be advanced that the Crow and Hidatsa independently of each other evolved a terminology reflecting their clan system. But when we consider that this by no means common feature is associated in Crow and Hidatsa terminology with an (except for a trace among the Blackfoot) unique mode of classifying the mother's brother, not to speak of other specific similarities, the suggestion of independent origin for the relationship features in question becomes absurd in the light of known tribal relations. Negatively, the non-recognition of the commonly designated relationship of nephew or niece must be considered historically significant.

To sum up the matter of the Crow and Hidatsa clans. There can be no doubt that we are dealing with a unique clan concept developed by the parent tribe, which concept has persisted with various adherent features in both branches and both by its positive and negative traits and correlates stands out in contrast to all other comparable clan systems. This, of course, does not mean that no differences have developed since the separation but simply that they are subordinate from the broader historical point of view. From other angles of vision two Hidatsa peculiarities are, indeed, noteworthy. First, we find that the funeral proceedings are conducted by the father's clan, which recalls the customs of remote tribes. Secondly, attention must be directed to the purchase of important ceremonial prerogatives from the real father. This shows clearly how not only the father's group but the father himself may be of great importance in a matrilineally organized society.

Turning to the larger social units, we find no trace of the dual division among the Crow while the loose and colorless phratries of the latter do not occur in Hidatsa society. I conclude that both types of unit developed since the separation from the parent tribe, being of more recent date than the clan system. I have suggested that the dual division was not borrowed by the Hidatsa from the Mandan but *vice versa;* however, this is a purely tentative assumption.

With regard to the various social customs described in the course of this paper, no exhaustive summary of significant points is possible. This is due partly to the wide distribution of these features, partly to the lack of data for many of the tribes that must be considered in a survey of this kind. For example, the Crow and Hidatsa share the levirate and the form of polygamous marriage with sisters, but these are so common in North America that no special importance can be attached to the coincidence.

To a certain extent this applies also to the parent-in-law taboo. While by no means universal, it is shared by such remote North American peoples as the Cree and the Navajo, and close resemblance of details must be looked for in support of historical conclusions. Yet even the similarities of this sort are often so distributed as to defeat specific results. For example, the Crow and Hidatsa both permit a removal of the taboo after bringing of a scalp or the presentation of a gift; and in both tribes the very names of the persons embraced in the taboo, and even the words composing them, were avoided. But the removal of the restriction in the manner stated is also shared by the Mandan, Assiniboin, Arapaho, Cree, and Blackfoot; and the name taboo is found among the Dakota and Assiniboin.

Without any pretence to completeness but merely in the hope of securing additional statements from fellow-students I append my notes on the distribution of the mother-in-law taboo. It occurs among the Tlingit and Haida;[1] Cree, Assiniboin, Blackfoot, Sarsi, and Gros Ventre;[2] Lemhi Shoshoni, Crow, Hidatsa, and Mandan;[3] Dakota, Ponca, and Omaha;[4] Arapaho, Cheyenne, and Kiowa;[5] Navajo and Apache;[6] Tübatulabal, Western (not Eastern) Mono, Yokuts, Miwok, Pomo and presumably Southern Wintun[7]; Creek and Alibamu.[8] A trace of the taboo — bashfulness about facing each other without the rule against conversation — has been recorded for the Beaver.[9] The mother-in-law taboo is known to be lacking among the Kwakiutl and Nootka;[10] the Arikara (p. 48) and Pawnee;[11] Ojibway;[12] Zuñi and Hopi;[13] Comanche, Wind River Shoshoni, Ute, Paviotso, and Paiute;[14] Yurok, Yuki, Kawaiisu, Luiseño, and Mohave.[15].

On the other hand, there are cases where absence of information is probably due to the recorder's neglect. Thus, very little is known as to the range of the taboo between father-in-law and daughter-in-law. It is probably everywhere weaker than the mother-in-law taboo, yet its recorded occurrence among the Dakota,[1] Assiniboin,[2] Kiowa,[3] Arapaho,[4] and Omaha [5] suggests a continuous distribution with connecting links as yet unnoted.[6] We have positive information that no such rule of avoidance existed among the Crow (p. 73) and the Blackfoot,[7] but even for the Hidatsa I can make no such positive statement.

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[1] Swanton, 424; *id.* personal information.

[2] Kane, 393; Lowie, (b), 41; Wissler, (a), 12; Kroeber, (b), 180.

[3] Lowie, (a), 211; Lowie, (c), 213; Maximilian, II, 132.

[4] Riggs, 204; J. O. Dorsey, 262f.

[5] Kroeber, (a), 9; information by Crow Indians; Methvin, 163 f.

[6] Goddard, (a), 162.

[7] Personal communication by Mr. E. W. Gifford; Kroeber, (d), 383.

[8] Personal communication by Doctor John R. Swanton.

[9] Goddard, (b), 222.

[10] Personal communication by Doctor E. Sapir.

[11] James, I, 262 f.

[12] Tanner, 146, but the name of the son-in-law was tabooed; Kohl, 273 ff.

[13] Doctor A. L. Kroeber's and the writer's field notes.

[14] Writer's notes.

[15] Kroeber, (d), 383.

Another case in point is the young man's practice of sneaking to a lodge of a night and touching a girl's body.[8] It was in vogue among the Oglala Dakota and Assiniboin,[9] but for all we know it may have been a general custom of the Plains region. Yet of the northern tribes the Oglala and Crow alone share so significant a trait as the licensed kidnapping of each other's wives by rival organizations,[10] so that the other parallel may very well turn out to be a reflection of their intimate contact.

Teknonymy, i. e., the designation of a person as So-and-so's father, grandfather, etc., is an equally tantalizing usage. Crow and Hidatsa both use it in the designation of spouses (p. 34), but a similar practice has been noted for the Tlingit [11] while with the Zuñi and Hopi [12] it attains a prevalence probably unsurpassed anywhere in the world. Does the Crow-Hidatsa custom represent a feature independently evolved by the parent tribe or are we dealing with a trait that has a much wider range than at present appears and which, for all we know, may have been borrowed by Hidatsa and Crow from different directions since their separation? The data for a solution must come from field-workers.

Another custom shared by the Crow and Hidatsa (p. 50) yet hardly to be considered of specific significance in the light of present knowledge is the close friendship between two male comrades. It is very highly developed among the Dakota,[13] Blackfoot,[14] and Cheyenne,[15] and even turns up in the Woodland area.[16]

Probably most, if not all, North American aborigines have some superstitious notions connected with menstruation, but the segregation of women during the menses is not nearly so common. We have positive statements as to the absence of the menstrual hut among the Blackfoot and Gros Ventre,[1] Crow,[2] and Arapaho,[3] and its existence was not recorded for the Hidatsa. However, the hut is found among the Dakota and Assiniboin,[4] the Omaha and Ponca.[5] Outside the Plains region the seclusion of girls at puberty is widespread. We find it, for example, among the Tlingit, Nootka, and Chinook;[6] Hupa and Shasta;[7] Pima;[8] Tahltan and Chipewyan;[9] Thompson River Indians and Nez Percé;[10] Lemhi and Wind River Shoshoni, Paviotso and Ute;[11] Northern Saulteaux and Menomini;[12] Creek and Yuchi.[13] The range of the custom suggests that its absence may have historical significance.

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[1] Riggs, 204.

[2] Lowie, (b), 41.

[3] Writer's field notes.

[4] Kroeber, (a), 9.

[5] Fletcher and La Flesche, 334.

[6] At least traces of the custom are recorded for the Beaver, Goddard, (b), 222; and Dr. Goddard tells me that similar bashfulness obtains among the Hupa.

[7] Wissler, (a), 13.

[8] Lowie, (c), 221 f.

[9] Wissler, (b), 77; Kurz, 110, 152.

[10] Lowie, (f), 903.

[11] Krause, 217.

[12] Kroeber, (c), 72; the writer's field notes.

[13] Riggs, 196.

[14] Wissler, (a), 16.

[15] Mooney, 416.

[16] Skinner, (b), 34.

The curious bashfulness of an adult brother and sister in each other's presence is common to the Crow and Hidatsa (p. 38). Restrictions on social intercourse between *Geschwister* of opposite sex are found in Melanesia,[14] but the only other recorded North American case I know of is that of the Arapaho.[15] This seems to be a matter on which few field-workers have made specific inquiries; a positive or negative report on this point will henceforth be highly desirable. The Yana rule that brother and sister must not address each other in the singular may turn out to belong to the same type of taboo.[16]

A particularly friendly relationship between brothers-in-law occurs among the Hidatsa and Crow. I am under the impression that this is by no means peculiar to them and have myself recorded a similar sentiment on the Wind River Shoshoni Reservation, but cannot at present place my finger on specific references for other peoples. In connection with the brother-in-law sentiment there is, however, one exceedingly suggestive detail. The Crow do not permit personal references of an obscene character in a brother-in-law's presence, the offender being punished with a blow.[1] This agrees exactly with the Arapaho conception of this relationship[2] and a close parallel (without the feature of the blow) has been noted for the Blackfoot.[3]

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[1] Wissler, (a), 29; Kroeber, (b), 181.

[2] Lowie, (c), 220.

[3] Kroeber, (a), 15.

[4] Lowie, (b), 39.

[5] J. O. Dorsey, 267.

[6] Swanton, 428; Sapir, (a), 67 ff; Boas, 246.

[7] Goddard, (c), 56; Dixon, 420, 457.

[8] Russell, 183.

[9] Emmons, 104; Hearne, 313.

[10] Teit, 312; Spinden, 198.

[11] Lowie, (a), 214, and field notes; Hopkins, 48; writer's field notes. Among the Southern Paiute there was the typical food taboo but I got no evidence of a special hut.

[12] Skinner, (a), 152; (b), 52. This writer also ascribes the custom to the Sauk, Fox, Kickapoo, Winnebago, and Ottawa.

[13] Speck, (a), 116; (b), 96.

[14] Speiser, 217.

[15] Kroeber, (a), 11.

[16] Sapir, (b), 95.

Another feature common to the Crow (p. 80), Arapaho[4] and Blackfoot[5] is the licensed familiarity between a brother-in-law and sister-in-law. It is also shared by the Hidatsa (p. 49), and occurs in the Woodland area.[6]

I cannot resist the temptation of calling attention to the common possession of a combination of sociological features by the Crow, Hidatsa, Arapaho, and Blackfoot. An examination of the age-societies of the Plains Indians led me to the conclusion that the Hidatsa must have been in contact, on the one hand, with the Arapaho and on the other with the Blackfoot.[7] We now find that the lack of a menstrual hut and the licensed familiarity between brother and sister-in-law are common to all four, while the brother-sister bashfulness is recorded for all but the Blackfoot, and the obscenity taboo between brothers-in-law holds for all except the Hidatsa. Since no direct historical connection existed between the Crow and Arapaho, the unique coincidence in the details of the last-mentioned trait permits the inference that it is one formerly shared by the Hidatsa. It should further be noted that each of the four features here considered (with the possible exception of the relations between brother and sister-in-law) is highly specific and relatively rare so far as our records go. For this reason I cannot regard the combination of resemblances as the result of chance, and interpret it as the effect of historical contact between the Hidatsa and Arapaho. The Blackfoot analogies do not seem to me to require the same sort of relationship; since the known Blackfoot-Crow relations suffice to account for the transmission of the relevant features.

Supreme contempt for the exhibition of jealousy is shown by the Crow and Hidatsa (pp. 86, 45), but I rather expect that more painstaking search will unearth other instances.

Finally, some attention must be devoted to the joking-relationship. Doctor Rivers found it in the Banks Islands, where relatives by marriage, and particularly the father's sister's husband, are subject to the practice.[8] The Hidatsa and the Crow, to my knowledge, are the only people in the world who regard the offspring of male members of the same clan as "chaffers," and the hair-cutting custom associated with the joking-relationship seems likewise peculiar to them. On the other hand, joking of some sort exists between quite different relatives elsewhere. In the field I learned that a Hopi will play tricks on his wife's brother's son, who returns the treatment in kind after reaching maturity. According to a personal communication from Doctor Radin the Winnebago have the joking-relationship between maternal uncle and nephew. Mr. Amos One-road, an educated Dakota, described the chaffing of his tribe as taking place between brothers-in-law, each belittling the other's achievements in war and the chase.

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[1] Lowie, (c), 214.
[2] Kroeber, (a), 11.
[3] Wissler, (a), 12.
[4] Kroeber, (a), 11.
[5] Wissler, (a), 12.
[6] Skinner, (c), 281.
[7] Lowie, (f), 946–954.
[8] Rivers, I, 40, 45 ff.

Here a word of caution is necessary. We must recognize that customs distinct both psychologically and historically may be labeled by the catchword "joking-relationship." This term, as we have seen (pp. 42, 49) might be extended to the mutual relations of Crow and Hidatsa brothers-in-law and also to those of a brother and sister-in-law. It is, however, clear that the *ī'watkucɛ`*—*makútsati* usage is something different and cannot, accordingly, be equated with an *alien* practice of chaffing either, unless characteristic features reappear. Thus, the Dakota "joking-relationship" is evidently homologous not with what I have called by that term among the Crow and Hidatsa but with the brother-in-law chaffing of these people. Similarly, the usage that figures so prominently in certain Menomini folk-tales is the parallel of the brother and sister-in-law license not of the *ī' watkucɛ`* practice. It hardly requires the statement that privileged familiarity between persons of opposite sex *must* have a different psychological import from such liberties between people of the same sex or of either sex without preference.

In conclusion a few words may be said on the study of social customs. While ample attention has been granted to the social organization of primitive tribes, usages of the type here dealt with have often been reported as though they were mere oddities. A brief consideration of some of the facts cited suffices to show their extraordinary theoretical value. In the Southwest the Apache and Navajo have the mother-in-law taboo but the Hopi and Zuñi lack it. Surrounded by tribes practising this custom, the Pawnee and Arikara, both of Caddoan stock, differ from their neighbors by its absence. Of the Shoshonean Plateau and Basin tribes it is found only among the Northern Shoshoni, who have had much contact with the Crow and Blackfoot. Practically all the Plateau Shoshoneans share the same menstrual customs. The recurrence of the Crow brother-in-law prudery in Arapaho society proves an indirect historical relation and prompts the search for intervening links.

Reverting to the Crow and Hidatsa, we have here two tribes distinct from all other Siouans by virtue of their close linguistic affinity. In many respects their cultures have differentiated far more than might be expected on the basis of this peculiarly intimate relationship. Yet both social organization and social customs preserve evidence of the unique connection between them, and I should say that this applies rather to the latter than the former. Were it not for the isolation of the Crow-Hidatsa mother-kins (always disregarding the Mandan) from tribes with like units, their common possession of a clan system would not be particularly impressive. It is the correlated social usages, such as the treatment accorded to the father's clan, and the absence of traits correlated with clans of other tribes, such as the avunculate, that give point to the comparison. The derivation of nicknames from actions of the father's clansmen and the *ī′ watkucɛ*\` custom show that unique historical relations are expressed in the parallelism of unique social usages. From this point of view the less conspicuous features of primitive social life acquire a novel significance: they are likely to be sign-posts of historical connection where other divisions of culture yield no evidence. What is more, in the case of widespread customs it is the most trifling details that are historically most significant. It is the blow feature that convinces us of community of origin in the case of the brother-in-law prudery of the Crow and Arapaho. Hence a mere statement as to the presence or absence of these customs, while valuable enough, is not sufficient; on all such points we require the greatest possible wealth of concrete information. It is in the hope of stimulating field-workers to obtain such data that I have ventured to offer the comparative notes of this chapter.

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ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

Vol. XXI, Part II

THE TOBACCO SOCIETY OF THE CROW INDIANS

BY

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NEW YORK
PUBLISHED BY ORDER OF THE TRUSTEES
1919

THE TOBACCO SOCIETY OF THE CROW INDIANS.

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PREFACE.

Although the Tobacco society loomed large in the tribal life of the Crow, its ceremonial activities probably ranking next to the Sun dance in importance, I am not acquainted with any detailed accounts of the organization. The only ones I have seen are that by Curtis in *The North American Indian*, vol. 4, 1909, pp. 61–67, and Simms's paper on the "Cultivation of 'Medicine Tobacco' by the Crows" in the *American Anthropologist* (N. S., vol. 6, 1904, pp. 331–335), which while announced as a preliminary report has remained without a sequel.

On my first visit to the Crow in 1907 I began to take notes on the Tobacco society and in the course of subsequent visits succeeded in accumulating considerable material on the subject. The greater portion of this information was secured at Lodge Grass, Montana; however, a fair amount of check data was obtained in other districts of the Reservation. Continued investigation would surely have added to my knowledge of detail, but it seems that the information here presented suffices to afford an understanding of the essential principles underlying the organization.

April, 1919. ROBERT H. LOWIE.

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INTRODUCTION.

Before offering a detailed account of the Tobacco society it seems desirable to give a brief sketch of Crow ceremonialism. Contrary to opinions sometimes expressed in print, the Crow Indians cannot be characterized as a preëminently ceremonial people. In this respect they do not even remotely approximate the Village tribes of the Upper Missouri, let alone the Pawnee or Hopi. For example, organizations like the military societies, which elsewhere are charged with a distinctly religious flavor even when they are placed in a lesser category of sacredness, are among the Crow so predominantly secular that they are best treated as purely social clubs; at best they display only the outward trappings of ceremonialism. Nor do we find a calendric series of festivals or any other attempt at systematic elaboration.

This does not mean that there is any dearth of set observances. The elements of ceremonialism pervade Crow life probably to as great an extent as they do the life of other Plains tribes; but they are rarely synthetized into impressive wholes. This may become clearer by a comparison with the Blackfoot. Crow culture shares the mystical accentuation of four, the altar, the use of incense, the ritualistic song. More important still, it is characterized by the dominance of the vision and the concept that its beneficial results are transferable by sale. With the Blackfoot, however, these features developed into an elaborate scheme of bundle rituals. Among the Crow there are comparable phenomena but they seem inferior both quantitatively and in point of integration. The Crow have not only fewer and on the whole less complicated rituals but their rituals do not conform to a pattern so definitely as Blackfoot bundle procedure conforms to the Beaver bundle standard. The contrast is even greater when the Crow are compared with the Hidatsa. The latter have a long series of bundles, including, e.g., the Bird, Missouri River, Soldiers' Sticks, Old Woman, and Wolf bundles, all of which manifestly represent a single ceremonial type. On the other hand, the Crow have very few pretentious bundles standing out from the host of individually owned charms and other lesser medicines; and of these few the Horse and Pipe medicines are demonstrably features borrowed in recent times from the Assiniboin and Hidatsa respectively. Further, the bundles of fairly long standing—the Sun Dance Doll, the Medicine Arrows, the Tobacco medicine—have each a marked individuality, thus hardly forming a well-defined group of ceremonial complexes.

If we look at Crow ceremonialism with reference to spectacular performances, we also find very few that properly come under this head,—the Tobacco complex, the Sun dance and to a decidedly lesser extent the Medicine Pipe ceremony and the Bear Song dance, the last-mentioned partaking of the nature of a shamanistic exhibition. The Cooked Meat Singing may also be cited as a performance of a certain solemnity in which a fairly large number of individuals participate.

It is further interesting to note that apart from the Tobacco society (and perhaps we might add the essentially alien Horse society), the Crow tendency is not to associate medicines with organizations properly so called. The germ of organization, to be sure, exists, viz., the conception of a ceremonial transfer as an adoption; but with the exceptions noted the germ has not given rise to societies but to individual relationships, possibly multiple but still individual. That is, a man may adopt several persons so that they will share in his medicine but generally their having a common 'father' is not stressed and they thus fail to form a definite body. The Tobacco medicine gave rise to a society precisely because the common ceremonial relationship was recognized.

The place of the Tobacco dance in Crow ceremonial life may possibly be elucidated by the following tentative tabular statement:—

Societies	I Without Adoption	(a) Military Clubs (Foxes, Lumpwoods, Big Dogs, etc.)
		(b) Modern Clubs (Night Hot Dancers, Big Ear-hole, etc.)
	II With formal adoption	(a) Tobacco
		(b) Horse

Ceremonies	I Individual and Shamanistic		
	II Group performances	(a) By definite groups	Tobacco Horse Medicine Pipe
		(b) By temporary groups	Cooked Meat Singing Bear Song Dance
	III Tribal: Sun Dance		

THE TOBACCO AND THE SOCIETY.

The only attempt at cultivation made by the Crow before their contact with the whites consisted in the annual planting of tobacco for purely ceremonial purposes. This practice, which persists to the present day, is mentioned by Beckwourth[1] and Maximilian. The former gives no hint of the species grown, but Maximilian identifies it with the tobacco of the village tribes of the Upper Missouri. He writes:—

> Diese Indianer sind ein umherziehendes Jägervolk, welches weder, wie die Mandans, Mönnitarris und Arikkaras, in feststehenden Dörfern wohnt, noch Pflanzungen anlegt, wenn man eine kleine Aussaat von Tabak (*Nicotiana quadrivalvis*) ausnimmt, welche sie gewöhnlich machen sollen.[2]

What is the warrant for this identification? It is true that Maximilian secured tobacco seed from several unspecified Plains tribes, which was afterward planted in botanical gardens and led to the determination of the tobacco as *Nicotiana quadrivalvis*.[3] However, there is convincing evidence that Maximilian either did not obtain *Crow* seed at all and gratuitously assumed its identity with that brought from the Mandan and Hidatsa;[4] or that the seed was indeed Crow but represented a species borrowed from the Hidatsa and only planted incidentally. For the Crow distinguish two varieties of Indian (as opposed to trader's) tobacco,—Tall Tobacco (*ōpʻhátskite*) and Short Tobacco (*ōpʻpúmite*); and Grandmother's-knife identifies the tall variety with the *ṓpuʻpe* of the Hidatsa. "*ōpʻ hátskite*," as he put it, "*awacɛ́ kō̃ á+ukʻ*," ("Tobacco-tall, the Hidatsa own that"). My impression is that both kinds are planted nowadays, though it is certain that only the Short Tobacco is considered sacred and that the annual planting has for its primary object the preservation of this purely ceremonial plant. From my photographs of the Lodge Grass garden in which this species was grown in 1910, as well as from a pressed specimen of the entire plant, Professor W. A. Setchell, of the University of California, concluded that the Short Tobacco differed specifically from the Hidatsa tobacco, being *Nicotiana multivalvis*, not *quadrivalvis*. Of the Crow plant Professor Setchell writes that it apparently does not exist apart from cultivation, but can be produced by selection from the ordinary wild tobacco of northern California.[5] The Crow view as to the diversity of the Hidatsa and Crow tobacco thus has a botanical foundation, and I am able to corroborate Mr. Curtis's statement to the effect that the Crow tobacco differed from that of the Hidatsa and that the latter only was employed for smoking.[1]

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[1] Bonner, *Beckwourth*, 259, 301, 325, 369.

[2] Maximilian, I, 399.

[3] *Ibid.*, II, 122.

[4] The form of statement in the quoted passage indicates that Maximilian had only hearsay evidence as to the Crow tobacco.

[5] Letters of June 18, 1912; May 20, 1914.

Since the Blackfoot have a tobacco ceremony which closely resembles that of the Crow in a number of details, it would be natural to assume that the plant cultivated is identical in the two tribes. This, however, does not seem to be the case. From a rather defective specimen Professor Setchell infers that the tobacco of the Northern Blackfoot is *Nicotiana attenuata*, distinct from both the Crow and Hidatsa species.

Planting Tobacco is not a natural right but a ceremonial privilege. Like other privileges of this sort, it dates back to a revelation of certain modes of procedure, songs, and regalia by a supernatural power. Participation in the benefits of this primary vision could, however, be secured through adoption by the visionary himself, or by those ceremonially descended from him by successive adoptions. The visionary and his ceremonial descendants, as defined, constituted the original Tobacco society (*bacúsuə*). New visions by members of this fold led to the segregation of chapters, all sharing the right to plant Tobacco but distinguished by ceremonial details and songs. The same result was also achieved by independent visions of the Tobacco granted to outsiders, who were thereby empowered to start new lines of descent.[2]

From what has been said it follows that membership in the Tobacco society differs from membership in, say, the age-societies of the Hidatsa or Mandan, where the candidates purchase societies outright, the sellers thereby renouncing all privileges connected therewith. In the Tobacco society the adopting individual remains a full-fledged member regardless of the heavy initiation fee and irrespective of the number of novices adopted by him. However, there are various prerogatives, connected with the society but not with membership as such, that are bought outright. Among these may be mentioned the ownership of the adoption lodge, the privilege of mixing the Tobacco prior to sowing the seed, and the mode of painting. Such privileges are inalienable except by sale, but may be allowed to lapse. Thus Gros Ventre-horse had been learning the art of mixing from Breath and Lump-on-the-lower-part-of-the-forehead but his masters died before he was thoroughly trained. Accordingly he mixed once, but found that he had forgotten some of the rules and refrained thereafter from exercising the prerogative. In other instances a wife's death was given as the reason for not participating. The privileges were not hereditary, though they might be purchased from a parent. This probably applies to the two or three cases in which a transfer from father or mother to child is mentioned in the following pages.

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[1] Curtis, IV, 61. Old-dog, however, said that the *stem* of the plant was formerly smoked after being greased.

[2] Since some of the origin accounts assume a knowledge of the ceremonial now followed, they will be presented after the description of the ceremonies.

Of the three local divisions of the Crow[1] the Minésepére (River Crow) planted Tobacco separately; the Erarapío sometimes joined the Many Lodges.

Assemblages for dancing occurred throughout the year, though more frequently after the planting ceremony.

When a Tobacco dance took place in the old days, it was obligatory on members to participate. Gray-bull says that if any of them did not come they were thrown into the river as a punishment. This, it is interesting to note, is a practice of the modern Hot dance clubs[2], though according to my informants, it was not in vogue among the older military organizations. It was further customary that if a Tobacco member struck his wife all the women of the society would throw the offender and other men into the creek, while if a woman similarly abused her husband she and other women would meet with the same fate at the hands of the male members. In case a member did not sing at a Tobacco dance the men would pour water on the women if a woman was at fault, and *vice versa*. Also any men who came late had to submit to this treatment; Gray-bull once had water poured down his shirt in the wintertime.

CHAPTERS OF THE SOCIETY.

Informants agree that long ago there were only a few chapters but that as a result of individual visions new ones originated. In some of these cases there ensued a complete separation of the visionary and his followers, in others they imposed the minor variations on the entire body or, failing that, remained as a somewhat differentiated subdivision of the chapter. With three local divisions of the Crow in the old days and constant quests of visions for one reason or another the conditions were favorable for the springing up of an indefinite number of chapters and I do not flatter myself with having ascertained the names of all of them. The sense of solidarity between the several chapters is strong and the variations are of so subordinate a character as compared with their essential resemblances that I am advisedly designating the individual groups as 'chapters' of one 'society' rather than as so many distinct societies though the native term *araxúa'tse* would justify this designation, since it is also applied to the military societies. In recent times some chapters that were once distinct have united from paucity of members in one or both of them.

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[1] Lowie, (a), 183.
[2] This series vol. XI, 205

Altogether I secured something like thirty names of Tobacco chapters, but it would be a very serious error to suppose that even approximately that number ever existed at one time in one of the local divisions. The largest series—of sixteen— was given by Muskrat, but four of her names, *tsipā xī'oce* (Ground-bug?), Squirrel, Wild Cat, Bear, occur in no other list; Old-dog enumerated thirteen chapters, among them those named after Red Paint and a species of hawk, which are peculiar to his account; One-horn's thirteen include a Rattle chapter which no one else referred to except by way of identifying it with the Buffalo; while of Medicine-crow's eleven the Cranes figure in no other report. From what we know of the history of the Tobacco society we may infer that these names were either restricted to a particular period or locality or are simply synonyms of names occurring in the other lists, or represent groups of members linked rather than distinct. For example, the Crazy Dogs from all accounts represent merely a segregation from the Weasel chapter without loss of the sentiment of solidarity. The Strawberries, at least in Lodge Grass, came to supersede the Otters in the manner described below; and the Tobacco chapter is likewise affiliated in some manner with them. Grandmother's-knife links the Eggs with the Ducks, while Medicine-crow explains that while originally the Eggs, Ducks and Prairie-Chickens were distinct they now form only one chapter, the Ducks. Crane-bear said that his group was first designated as Prairie-chicken dancers, but that after the Egg vision of a member (see p. 126) the name was changed accordingly. Shot-in-the-hands regards the Prairie Dogs and Yellow Tobacco people as forming one chapter.

A priori it is of course extremely probable that such processes of separation and absorption as can be traced for the period of the last half century have been going on for many years previous. Thus it is not easy to speculate as to the early constitution of the society. The oldest informant, Strikes-both-ways, a woman of about one hundred years of age, enumerated five Tobacco chapters that existed in her day: the Weasels, Otters, Elks, White Birds, and Tobacco chapter. Gray-bull, a generation younger, gave the Prairie-chicken, Otter, Weasel, Duck, and Tobacco chapters. Mr. Curtis lists the Tobacco, Weasel, Otter, Blackbird, and Prairie-dog groups. Comparing Mr. Curtis's series for Pryor with those of nine of my informants representing several of the present districts, I find that all mention the Weasels, all but one the Tobacco group, while the Otters, Ducks, and Wolverenes occur seven times each. The last mentioned group, however, was never mentioned as one of the ancient chapters. Altogether it seems reasonable to assume that the Tobacco chapter represents the germ of the whole society and that the Weasels and Otters were among the oldest branches, the antiquity of the Weasels being inferred from their occurrence in every list, that of the Otters from the prominence of the Otter medicine at the planting and of otter emblems (Fig. 1) in a number of the chapters.

The following is a complete list of the names secured. Etymologically the rendering of the ending found in most of the native designations is not quite certain. The suffix *bicɛ̀*, *micɛ̀* corresponds to the Spanish *hay* or French *il y a*, so that *mapúxtamicɛ̀* might be rendered, "There are otters." Sometimes, however, the corresponding forms are recorded with an additional labial, e.g., *mapúxtambicɛ̀*, and it is possible that the *am* is a local prefix giving to the word the meaning, "Where there are otters." Again the *am* might represent a decapitated *ham*, "some," so that the rendering would change to "Where there are some otters." Elisions and contractions are extremely common in Crow.

My authorities for the list are Curtis, Strikes-both-ways, Little-rump, One-horn, Muskrat, Gray-bull, Old-dog, Shot-in-the-hand, Grandmother's-knife, No-shinbone, and Medicine-crow.

Weasel (ū́ᵘtambicɛ̀)
Tobacco (íʻtsiʻtsiəmicɛ̀ or ṓᵒpəmicɛ̀)
Otter (mapúxtamicɛ̀)
Duck (mī́axākamicɛ̀)
Wolverene (mapúxtəkbī̀ərəmicɛ̀)
Eagle (nakā́kamicɛ̀)
Crazy Dog (mícg·ewarā́ᵃxe)
Egg (íʻg·əmicɛ̀)
Strawberry (ick·ṓcitemicɛ̀)
Yellow Tobacco (íʻtsiʻtsecī́ramicɛ̀)
Blackbird (baxī́ramicɛ̀)
Prairie-dog (tsiʻpé)
Buffalo (bicḗ micɛ̀)
White Man's dance (ba+ictcī́ndisùə)[1]
Prairie-chicken (tsī́tsg·e)
Elk (itsī́rik·ā̀ᵃce)
Horse (itsī́re)
Rattle (ī́ⁱpuxemicɛ̀)
Ground-bug ? (tsipaxī́oce)
Species of squirrel (icterḗctsìə)
Pine (bā́tsiəmicɛ̀)
Wild-cat (icbī́axìce)
Bear (naxpitsé)
Red Paint (awáxuwəmicɛ̀)
White Bird (nakā́ksiəmicɛ̀)
Species of hawk (ba+ipxaxɛambicɛ̀)
Meadowlark (ma+ūwatcirəmicɛ̀)
Crane
Beaver dance (birə′pdisùə)

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[1] Old-dog gave bá+ictcīrambicɛ̀, and my then interpreter translated this "White-hair-owners," literally, White-men-where-there-are.

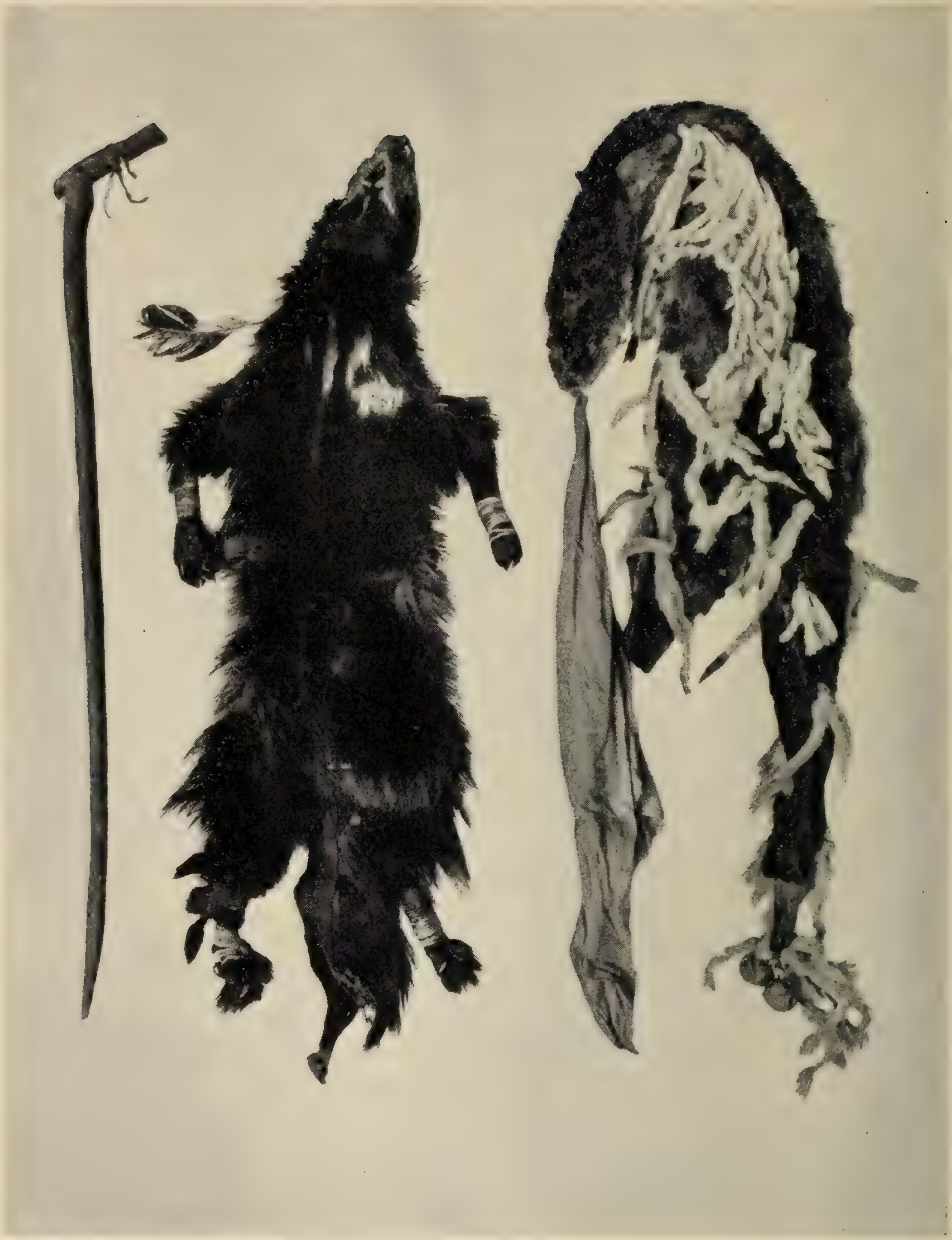

Fig. 1 *a* (50.1-3935), *b* (50.1-3981), *c* (50.1-3945). Digging-stick used in Tobacco Planting; Wolverene Skin, Emblem of Wolverene Chapter; Otter Emblem.

STRAWBERRY CHAPTER.

This chapter originated in a vision by Medicine-crow and through his influence has become one of the most important branches of the society. Its development may be regarded as typical.

When Medicine-crow was still a young man, he fasted and prayed for four days on the west bank of the Yellowstone, near the Old Agency. He cut off a finger joint and offered it to the Sun. "Sun, look at me, I am poor. I wish to own horses. Make me wealthy. This is why I give you my little finger." The blood poured down. He fell dead. Towards dawn he saw a young man and a young woman coming from the west. They stood before him, and said, "We have seen that you are a poor man, and we have come to see what we can do for you." Each held in one hand a hoop, which was decorated with feathers painted red, and in the other hand a hoop of strawberries. Looking more closely, Medicine-crow saw that each also had a Tobacco 'cherry' and a strawberry tied to the back of the head, as well as the entire body of a red-headed woodpecker. The woman said, "We have come here to let him hear something." Medicine-crow said to himself, "I wonder what it is that they wish to show me." The young man went to the other side of the ridge, but soon reappeared with a herd of horses. He drove them up to Medicine-crow. The young woman said, "Wait, I will go and bring some too." She went over the hill, and returned with a fairly large herd of horses. She said, "My child, I have shown you a good thing." Both said, "We have shown you twenty head of horses." These two young people were the Tobacco plant (i‘tsi‘tsɛ̀) itself; they wore wreaths round the head. It said, "I have shown you all these horses. I am the Tobacco. I want you to join the Tobacco with these crowns." The man said, "Look at this young woman, she is Walks-with-her-dress." Later, Medicine-crow gave this name to my interpreter's little girl. The young woman, half of whose face was painted red, said, "Do not bring any guns. We are going to have the Tobacco planting. I am afraid of a gun." So nowadays no guns are used in connection with the ceremony, and shooting is not permitted. All of Medicine-crow's adoptive children wear crowns of the type shown in the vision. After a while he came to. The people came after him, and took him home, for he was weak from loss of blood. Subsequently he really came to own a great many horses. After he had received this revelation he was adopted by the Otters, gave prominence to his individual vision, and made the organization into the Strawberry chapter. This may, however, apply only to the Lodge Grass district.

As founder of the chapter Medicine-crow naturally occupies an altogether unique position in it. He is the chief Mixer, assisted by Old-dog and in 1912 by Bright-wing as well. According to Old-dog the founder still remained Mixer because he was permitted to sell the privilege four times.[1] In the planting Medicine-crow's wife used to be the leader, but she sold the office to Bright-wing's wife for a horse. Medicine-crow and Old-dog paint the male members of the chapter, and their wives the women. Medicine-crow, of course, dreamt the paint and transferred the privilege to Old-dog; he is also the Tobacco-lighter at an adoption. On the other hand, Banks is the owner of the adoption lodge and Banks's wife distributes food among the members, whether because of her husband's ownership of the lodge or not is not quite certain.

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[1] Bread, however, suggests that the mixing privilege held by Medicine-crow subsequently to the sale has nothing to do with his vision but was acquired from someone else.

The Strawberry chapter has for its emblems wreaths of artificial flowers and in dancing the members hold chokecherry leaves.

OTTER CHAPTER.

The membership of this chapter has been greatly reduced, at least in the Lodge Grass district, where Young-crane enumerated only herself, Bad-heart, Bear-don't-walk's wife, Bull-weasel's wife and Crazy-head's second wife as surviving members. When Hunts-the-enemy was living, they still had a place for themselves in the Tobacco garden, but since they no longer have a Mixer they have ceased to plant as a body. Young-crane no longer plants at all, the rest associate with other chapters. While the members had otterskin emblems—in fact, I purchased the one Young-crane had received at her initiation—it appears from other statements that otterskins were also held by dancers of other chapters.

Grandmother's-knife said that at Lodge Grass the Otter and Tobacco chapters are at present associated; the Strawberry chapter is an offshoot from the Otter branch (see p. 117).

From Lone-tree of the Bighorn district I secured the words of two Otter songs:—

1.

bī́ra	bāwacī́ⁱrəkʻ;	bī́ra	bȁwḗk.
My own (dream)	I dreamt;	my own (property)	I owned.

hirén	ī́k·a kawè!	awɛ́	k·ōtá	ī́k·akawè!
These	look at them!	The country	whole	look at it!

2.

barī́cik·,	bāwū́c-bíəwak.	bí wakàtsik·,	biricbí bī́əwak.
I am hungry,	I want to eat.	I am thirsty,	I want to drink.

It is possible that the otter medicine which plays so important a part in the planting ceremony is in some way associated with the Otter chapter. In 1910 I secured a dewclaw rattle patterned on that of the Big Dogs, but shorter and more elaborately decorated, with plumes, strings of beads, strips of ermine skin, and small bags enclosing Tobacco seeds.[1]

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[1] For illustration, see vol. XI of this series, 177.

This rattle was formerly carried in the dance of the Otter chapter and once formed part of the same medicine bundle that contained the sacred otter of the planting procession. The contents of the bundle were subsequently divided between two owners. Gray-bull's wife had kept the rattle in order to attain old age, and several years later when she had died her husband remarked casually that her death might have been due to her selling it to me.

WEASEL CHAPTER AND CRAZY DOGS.

The Weasels form one of the largest chapters, of which the Crazy Dogs are regarded as an offshoot. In 1914 the Weasels, Crazy Dogs, and Wolverenes all joined in the planting. My principal informant for the Weasels was Muskrat, who had been Mixer, an intelligent and well-informed but inordinately conceited old woman. Old people resented her exercising the duties of Mixer after selling the privilege. She herself told me that she had sold only a share of the privilege. Her statements were challenged on several points by other Indians,—more particularly her occasional pretensions to having founded the chapter, which in fact are contradictory to her own data. The truth of the matter presumably is that she revived the chapter when it had been reduced in numbers. That the Weasels were organized before Muskrat's day was attested by Strikes-both-ways, the oldest Indian on the reservation. Nevertheless Muskrat's narrative, apart from attempts at self-aggrandizement, rings true: even if she has appropriated some one else's visions, the incidents she recites may be taken as typical of such experiences.

According to one of Muskrat's accounts, there was a man named Old-man-doing-foolish-things (*barḗ wārihìsa-isá‘ke*) who founded the Weasel branch, though the following vision, which she attributes to him, has no apparent connection with this chapter. He went to fast on Cloud's Peak and met two white men. "Here," said they, "take this," and they placed one little human being in each of his hands. Both were white and wore trousers. Awaking he found them and brought them back to camp. His visitants said, "We give you these in order that you may see visions of every kind." The pygmies told him, "If your wife is ever unfaithful, we'll tell you about it." He kept them wrapped up. They told him that whenever they embraced each other it would be an indication that his wife had been with another man. Every day he examined them until one day he actually found them embracing each other. His wife was afraid whenever he opened his bundle. This bundle is still at Lodge Grass; Hunts-the-enemy had it until his death. All the people are afraid of it. The owner was Muskrat's adoptive father. She continues as follows:—

One day Old-man-doing-foolish-things invited me and my comrade to see the pygmies. We were afraid for we were young and free in our actions. However we had not had any sexual intercourse recently, so the pygmies were not in embrace and their owner said, "ítse arákūk" (Well, i.e., safely, you have seen them), and wrapped them up again. This man made a weasel (emblem) for me, called in all the members and gave me the weasel, whereupon I started the Weasel branch. My husband saw another weasel and I took that also.

Soon after this my younger brother was killed,[1] and mourning I carried the weasel to the peaks of the Wolf Mountains. I slept by a high red peak near the site of Parkman and myself saw a weasel. Thus I had three weasels, my adoptive father's, my husband's, and my own. I looked for a fourth before organizing the branch. Two weasels were killed nearby and both were given to me. Then I started the chapter. I used to make belts for the members, but one day I brought out my weasels, then all wanted to purchase them and bought all except the one given to me by my 'father.' When I was adopted, the chapter had no name, it was just referred to as Old-man-doing-foolish-things' people. When I saw plenty of weasels in my vision I thought there would be many members. I adopted a good many; all the weasel emblems were made by me.

Reverting to her visionary experiences, Muskrat said:—

While in a half-awake condition I felt things running all over me. I thought it was some mice. Before sunrise I lifted the blanket gently from my face and beheld two weasels looking at me. I looked at them. They went on each side of my body, then disappeared over a rock above my head. After they had left me, I cried again till I was tired, then I kept still. An eagle came soaring close and alighted a short distance from me. He looked at me and hopped to within a few paces from me. We both looked at each other. It began to drizzle; when the eagle flapped his wings, it seemed as though the rain ceased, then it would begin again. The eagle began to speak. "I was coming to you first, but the weasels got ahead of me. You had better go home." He dropped a plume from the base of his wing. "This I give you, now go home." He soared off, while I kept watching him for some time. When I got back, I attached the plume at the back near the crown of the head and tied a weasel to each side of the head. I had been told [in the vision] to use weasels found near my home, then on the Little Bighorn. I saw four weasels, going into two holes by pairs. A girl drowned them out, and on the same day I got a fifth. I have obtained several weasels since, but my adoptive children got nearly all of them. Through this medicine I got a great deal of help, receiving horses in payment for the weasels.

Not knowing what to do with the weasels, I went back to the same place to fast, but then I heard some one tell me to go to another place a short distance thence. There I saw a dance lodge with weasels strung out in front of the dancers. I rose to dance, and they said, "Give her the weasel." So I got the weasel to dance with.[1] The second time I and one of my children got up, and someone then said, "Give her the whistle." Then both of us danced.

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[1] From a subsequent explanation it appears that this was Wraps-up-his-tail, famous for his uprising in 1890.

At the first snowfall I rejoined the Tobacco dance. By that time I had gathered plenty of weasels. This happened a considerable time after my original adoption into the Tobacco society.

Muskrat said that when she joined the society there were only two chapters, the Horses and the Prairie-dogs, and that she was adopted into the Horse chapter. The first part of this statement is certainly erroneous (see p. 114).

On another occasion Muskrat had a vision of how to mix. She used a combination of onions, 'bear-food' (turnip), wild grapes, *mā+isacpíte* ('black potato') weed, a black root, a mountain weed poisonous for horses, cow chips, and the dirt from a mole hill. According to her, there was a lapse of five years during which the chapter did not plant for lack of a Mixer, but as a result of her vision planting was resumed. In 1914 she mixed four ingredients, with water and tobacco,—black potato, *bi'tsirī́ watsùə* ('cactus-berries') and *bicɛ́cti-kìcɛ̀* ('buffalo-eyes-resembling'); on the following morning she added *mā́sare* (mole dirt) and manure.

From Gray-bull's account it appears that Muskrat was by no means the only Mixer, though she may have been the most prominent one. He himself held the office for three years, mixing for some members of the chapter; while other Mixers attended to the rest. At the end of that period he sold the privilege. He says that each Mixer had a slightly different method. He himself used chokecherries, the leaf of a box-elder chewed by himself, a wild onion crushed between the fingers, the roots of the wild lily, and cow chips—all of these finely pulverized.

In addition to being Mixer, Muskrat also acted as Painter, decorating the forehead and upper part of the face with red paint. At one time she also owned the adoption lodge privilege, but she sold it.

In 1914 Muskrat gave an essentially different account of her vision. She then said that there had been a Weasel chapter consisting of an old man, his wife, and a very few followers. After giving her a weasel, they took the emblem away from her and for this reason she grieved and went out to fast in the mountains. A cloud came up, so she went to the rocks for shelter and lay down to sleep. A weasel appeared, went on her neck, causing a queer feeling, and entered her stomach. She heard it whistling with all its might. The weasel said, " This is what we want to give you." Then he gave her a whistle and sang this song:—

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[1] Before using weasels, the informant explained later, some held boughs of trees to dance with.

ū́ᵘte	íkˑuctsī́ⁱruk;	ṓpe	ikˑuctsí	waʻtsḗwikˑ.
The weasels	are coming out;	Tobacco	to come out	I shall cause.

In a Tobacco dance an old man asked her to get up and dance, then Muskrat sang this song. When she awoke, she looked round and saw nothing. Ever since then she has had control over weasels, and through her the Weasel chapter gained its renown. The weasel warned her against having her kidneys struck lest she go into a trance, so other people respect her and take care lest anything bump against her. Only lately she dreamt of owning some weasels and soon after this a weasel was brought to her.

The most interesting feature of this account is the introduction of the *bātsirə'pe* motive, which was also encountered in connection with other chapters. A *bātsirə'pe* is a mysterious animal or object that enters a person's body and part of which is made to come out at a special ceremony called the Bear Song dance. Muskrat added that on another fasting occasion a horse had also entered her body.

Bear-gets-up described a typical Weasel bundle as containing several stuffed weaselskins (Fig 2); one with a ribbon round the waist after the fashion of a saddle blanket; another with different kinds of yarn braided together for a collar; a third with the same yarn combination unbraided and in the weasel's mouth. In 1911 the informant no longer owned the medicines he had received as a novice because at later adoptions the initiates had chosen some of the medicines from his bag. Some of the Weasel members had otter belts with little hoofs at the end, causing them to make a rattling sound when moved. There was a special song for those having these belts to get up and dance; and when they danced their belts rattled. Some of the other chapters said, " Those are just like Crazy Dogs," whence this name. Once enemies were expected and Bear-gets-up had on his horse a Crazy Dog belt owned by his wife. The man who had originated the Crazy Dog branch came to him and asked him for it, saying, " I do not know whether this is for war, I'll try it." However, it proved a false alarm, the enemy did not come, and there was no chance to test the virtues of the belt.

Grandmother's-knife confirmed Bear-gets-up's statements as to the Crazy Dogs. They are simply a subdivision of the Weasels distinguished by otterskin belts with little bells at the end. They shook these like the

Crazy-Dogs-wishing-to-die, whence the name. According to this informant, the Crazy Dogs and Weasels form the largest Tobacco chapter.

Arm-round-the-neck, another Weasel, added some interesting data. When he was a boy the dance of the members differed from that of today. They did not stand up but knelt with whistles in their mouths, which they blew during the dance, while holding white and yellow weasels in their hands. The women still use weasels to dance with, but the male members no longer do so, Arm-round-the-neck does not know why not. Now the men use sticks and feathers to dance with. Sometimes men and women dance jointly but in general separately, and in the old days it was the same way. When adopted, the informant's wife received a weasel, the wing of a bird, and an otter, while he merely got a shell necklace, the only thing he had selected. Nearly all the chapters use otters, but only the Weasels have weasel emblems.

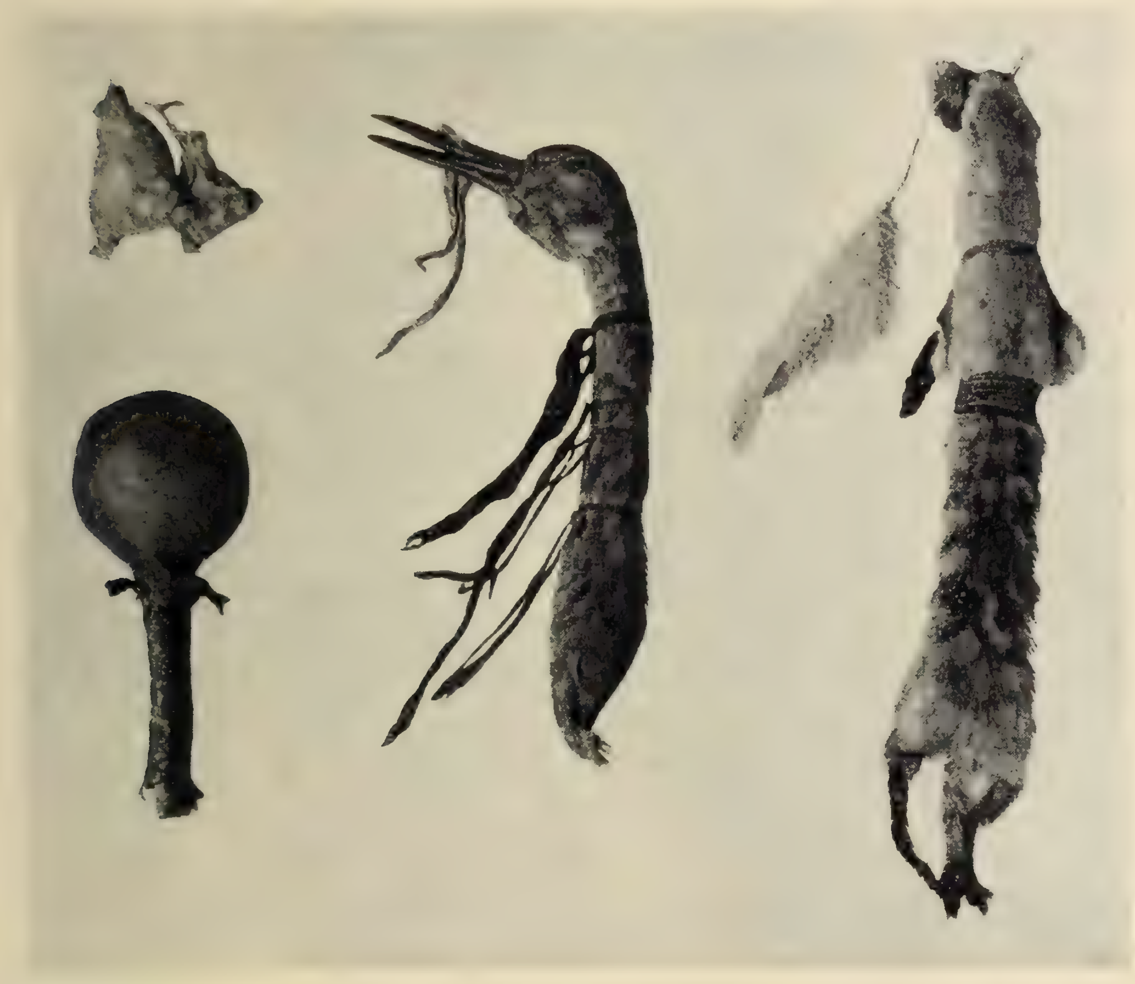

Fig. 2 *a* (50.1-3962ab), *b* (50.1-3887), *c* (50.1-3946), *d* (50.1-3948). Small Tobacco Bags, Rattle Crane Emblem, and Weasel Emblem.

Gray-bull said that while he had seen men hold weasels in the dance this was usually done only by the women. Personally he would dance with weasel skins now (1913) if his wife were living, for he had dreamed two weasel songs. In the old days weasel skins were not taken along for the planting ceremony, as is customary now.

YELLOW TOBACCO CHAPTER.

Shows-a-fish gave the following origin account. A man was mourning on the prairie and had a vision of a lizard. He went home and made a buckskin shirt with fringed seams at the side and bottom; on each shoulder he drew the picture of a lizard. The shirt was painted yellow. He also used yellow calico and a red blanket at the Tobacco planting. Further he would tie a small package of Tobacco, beaded at the opening, as well as a yellow object to a chokecherry stick and plant it before him at a dance. This method was passed on from generation to generation.

While this last sentence implies considerable antiquity, other informants ascribe the origin of the chapter to Mosquito (Apǎkec), at a time when an old Crow living in Lodge Grass was a young man. Mosquito had been adopted into the Tobacco society by Muskrat's father, but as the result of a dream he founded the Yellow Tobacco chapter. This differed from other chapters in the mixture used for planting. The Tobacco seeds were the same, but the Yellow Tobacco people had different ingredients otherwise; they used wild onions, mole-dirt, buffalo chips, and young willow roots. As a result of his vision the Yellow Tobacco entered Mosquito's body as his *bǎtsirə'pe,* and sometimes it would get out of him. Gros-Ventre's father-in-law and my informant's brother (=Mosquito's son?) had the same power, which was manifested at the Bear Song dance.

Old-woman (Xǎriec), who seems to have been Mosquito's daughter, was the Mixer of the Yellow Tobacco chapter, having obtained the privilege from her father. She said that sometimes she had only mixed for from three to five members, then again for a good many. Though properly adopted into this chapter, she was at the time of my interview connected with the Wolverenes, "Because her brother was a member and owned the medicine."

Little-rump admitted that Old-woman was the principal Mixer, but said that Mapgie was likewise and he himself had been once, but had given up the office after his wife's death. Similarly, he had bought the right to distribute food before his wife's death but used it only once.

The ownership of the adoption lodge he gave to Magpie when he adopted him. Magpie's wife, as well as others, have the privilege of distributing food.

Little-rump said he still continued to dream about the Yellow Tobacco and heard the Tobacco sing. He dreams in any place, indoors or outdoors, night or day; usually he learns the songs he hears in his dreams. " Some of them I consider sacred. When I hear a song and have good luck immediately after that, then I consider the song sacred."

The members wore yellow shirts in battle, but not all owned such, they had to be specially purchased. This was the only chapter to use yellow shirts. Little-rump's wife had a yellow dress and blanket.

A Yellow Tobacco bundle exhibited by Shows-a-fish contained two women's dresses and a man's shirt, all of yellow cloth, with small Tobacco bags tied to them. He said that in dancing the members held yellow mufflers in their hands, or boughs with foliage. Cuts-the-picketed mule gave a circumstantial account of the members' equipment and decoration. The men wore yellow shirts with ermine skin trimming on the upper arms; all their clothing was yellow, necklaces were of yellow beads,[1] and the face and hair were painted yellow. The women wore yellow dresses and blankets, bracelets of beads, and otterskin crowns. Each had a strip of blue cloth tied to the hair and a yellow eagle plume to the back of the head, while the men wore one on one of the temples. The women all had a buckskin image of a lizard, and two of the men wore such images in the back and had yellow beadwork ornamentation on their sleeves. All had yellow mufflers. While dancing they held a forked stick long enough to touch the ground. To this there were tied a yellow handkerchief and a small Tobacco bag, decorated with yellow beadwork and an eagle plume tied to it.

In the Tobacco garden this chapter planted at the extreme right(?). Their number has been very much reduced of late years. In Lodge Grass there were only five in 1911: Shows-a-fish, Walks-on-the-ice, Bull-weasel, Old-woman, Cuts-the-picketed--mule.

Shot-in-the-hand (Big Horn District) said the Prairie-Dog and Yellow Tobacco chapters were identical.

EGG CHAPTER.

The formation of this chapter is typical. Fire-weasel had been adopted into the Wolverene chapter. Soon after this event the brother of his initiator shot and killed himself. Then Fire-weasel's initiator wandered about mourning and discovered a nest of eggs, one of which was different from the rest. He carried it away and dreamt about it. It entered his body through his mouth. Thereafter, whenever the people had a Tobacco dance at a certain song the egg would come out of his mouth, but afterwards go in again. This feature was so conspicuous that the name of the chapter was altered accordingly. Still later it was renamed for the Duck. Once Fire-weasel and his adopter were taking part in a Tobacco dance. At the appropriate song the ‘ father ’ spat out the egg and gave it to Fire-weasel to hold during the dance, after which he swallowed it again.

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[1] One-horn said the necklaces were of Tobacco seeds colored yellow.

Arm-round-the-neck says the founder of the chapter was the father of Three-foretops (i'g·apí ria-rā̃wic), a middle-aged man living at Lodge Grass. He has seen him show up the egg at a daytime dance, and when people had done looking at it he put it back into his mouth again. Unlike the people who exhibited their *bătsirə'pe* at the Bear Song dance Three-foretops' father did not go into a trance during his exhibition. He adopted a man who also spat forth an egg, but thereby he did not lose his own power. This second man showed the egg more frequently than his Master. However, my informant was inclined to regard his performances as spurious; the egg he exhibited was too round for a real egg and too heavy in proportion to its size.

Fire-weasel said that he himself once found a little smooth stone in a nest of eggs and has kept it ever since. He dictated the following two songs of his chapter:—

1.

bà̃-watsī́rik·;	i'g·e'	batsī́rik·.
Something I am hunting;	eggs	I am hunting.

2.

kam-bí-rɛ'k·ù-rək.	barḗwik·.	i'g·é	bū́cbi	barḗwik·.
If someone sends me somewhere,	I shall go.	Eggs	to eat	I shall go.

At Pryor I purchased a blanket which Henry Russell's wife had worn when a member of the Egg chapter (see Fig. 3). The visionary who had seen the blanket originally and from whom my informants had obtained it was dead in 1910, besides the Russells had left the Egg people and joined the Otters, hence they were less reluctant to part with the object than would otherwise have been the case. What they actually purchased was the *right* to have such a blanket made as the visionary described; for this Henry paid him a horse worth $62. Then he had to hire a good draftsman to do the painting, which cost him another five dollars, and finally he had to buy the appropriate feather decoration. The angular horseshoe at the bottom of the blanket symbolizes good luck with horses. The drawing is that of an eagle in the clouds, which the Russells take to represent Thunder, though the dreamer did not expressly so identify it. This visionary had been very poor, owning only three horses. He went to the mountains to fast and saw the blanket. Then he rapidly became wealthy and was fortunate in all his enterprises. He sold land for which other tribesmen had never received more than $600 for $2,200, and died as one of the richest Crow Indians, which his people ascribe to the vision. Once in the spring and once in the fall he would visit the Russells, bid them unwrap the bundle containing the blanket, and prophesy good luck for the couple that season. Then Henry always gave him five dollars or an equivalent present.

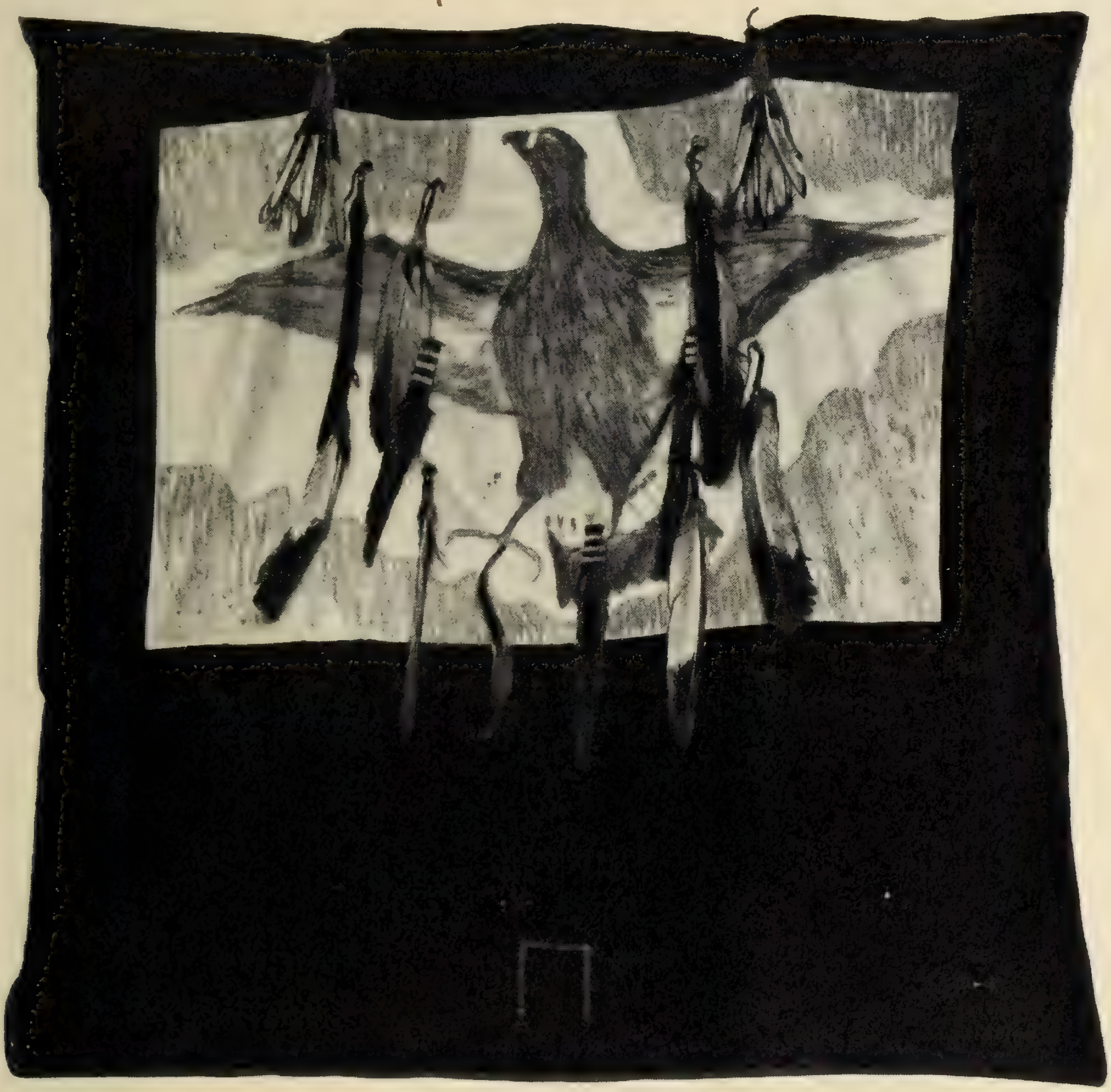

Fig. 3 (50.1-3987). Blanket of Egg Chapter.

BLACKBIRD CHAPTER.

This chapter originated within the lifetime of Gros-Ventre-horse, my informant. There was a man named Breath, whose father had the blackbird for his medicine and gave a stuffed blackbird to his son. Breath was already a member of the Tobacco society and had adopted people into it, who also wanted the blackbird for their medicine. He dreamt a song about the blackbird and distributed stuffed blackbirds among his 'children,' thus founding a new chapter.

In dancing the members would tie blackbirds to the backs of their blankets, which themselves were black in imitation of the birds. Two kinds of paint were used, according to individual choice. Some painted the face with heavy red paint from the eyes up and with light red from the eyes down, with red ground-paint rubbed on the hair. Others put red paint on the face and one very large black spot on each cheekbone.

Since there is no head to the chapter at Lodge Grass, Gros-Ventre-horse joined White-man-runs-him in the Weasel chapter. Once an Indian from the Big Horn District came to Lodge Grass to plant in the name of the Blackbird chapter, for members are not obliged to plant in their own district.

BUFFALO CHAPTER.

This is a chapter of recent origin, organized about 1907 according to One-horn, while Pretty-enemy puts the date about twenty-six years farther back, which seems more probable.

Big-shoulder-blade's brother had been killed and he went out on the prairie to fast. On the other side of the Yellowstone he slept on a hill called Ridge-to-the-buffalo or Bear's Lodge. His brother had been sneaking up to the enemy's camp; he was shot near the junction of the Tongue and Yellowstone rivers, tried to get home, but was found dead on the ridge where Big-shoulderblade slept. There he dreamt. The buffalo adopted him and gave him medicine.

He slept four days on the ridge. Where the sun came up he saw four young men to correspond with the four nights he had spent there. They came up to him, each wearing a buffalo skin cap with horns. The first man had one of these slim unjointed willows. One of the men said, " This is a good strong thing; if you want it, take it." The second one had a straight pipe. One of his companions said, " This is strong too, if you lose the tracks and pour smoke on it, you will find the enemy's tracks." The third man had his cap covered with white dirt; he was one-eyed. " That is good too, but the person who owns it will have only one eye." This was the strongest of the four. The fourth had the horns covered with red paint and the crown also painted red. This one sang a song. "You have been traveling about here for a long time. You will be repaid and take revenge. Sing this song and you shall kill the enemy as a reward."

After returning from this vision Big-shoulderblade told the Indians about it, but they were skeptical. However, he set out on a war party with Plenty-coups and killed a young enemy just as old as his brother. Then he became a leader of a war party and made the Buffalo dance. Afterwards Leads-the-wolf adopted him into the Tobacco chapter. Big-shoulderblade made caps for his adoptive sons and named the chapter for the Buffalo. Hence Pretty-enemy considers the Buffalo and Tobacco chapters identical.

The women put red paint in small patches on each cheek and on the forehead. Since Big-shoulderblade's decease White-man-runs-him is Painter. He also has a buffalo horn cap obtained through adoption by Big-shoulderblade's children. The first of these caps was made for Red-wolf's brother, who on being adopted by the founder was called He-has-the-horns. All the men wore a piece of buffalo tail on their hats. A buffalo tail was also decorated with little bells and made into a horse's necklace; furthermore, from the chest part of the buffalo hide they made an object to be worn over the horse collar by the horses.

EAGLE CHAPTER.[1]

In the generation preceding that of Cuts-the-picketed-mule a man named Sore-tail had a vision which led him to institute this chapter.

Sore-tail had been the poorest man of all until he went out to the Wolf Mountains in quest of a revelation; he did not even have a horse to ride. The Sun was his medicine[2] and visited him as he was lying on his blanket, saying, "I will send my messenger to you." The Eagle was his messenger; on arriving he said to Sore-tail, "You shall be poor no more, the butte of the Wolf Mountains shall be your home." Then he saw a tipi with a special number and arrangement of poles: there were four main poles, eleven poles on each side, and two on each side of the doorway. It was ornamented with differently colored streamers.

After his vision, when they moved camp he had seven mules to carry his tipi poles and he came to have a herd of from seventy to a hundred horses. His daughter had elk teeth down to her feet; she would always stay in the rear of the tent, and her part was fixed with red flannel. His sister-in-law used nothing but a striped blanket, his wife a white and red blanket. The backrest frame was very high and was covered by two buffalo hides on each side; he had a special horse to transport it. His children were ornamented with shells. There was no one in camp like him, he was by far the richest of all the Crow. Anyone wishing to go on the warpath consulted him, and he sent them out with a blue feather on the neck. He even sent a woman out on the warpath and she came back victorious.

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[1] *nakā́ka* means "bird," nakā́k-dɛ́əxe, "eagle," but the specifying adjective is often omitted, the eagle being designated as the bird *par excellence.*

[2] The statement was added that Sore-tail was the owner of a medicine doll, such as was used in the Sun dance, but whether it was acquired before, at, or after the vision described is not certain.

Sore-tail said he wished to have a Tobacco dance in the lodge that had been revealed to him. He had many followers and told them he would prepare the tipi for the dance. In the rear he hung up an eagle on a shield. He stripped the eagle tail of its feathers and dyed them red; this was the men's medicine, to be tied to the back of the head. The smaller wing feathers were for the women. He painted the upper part of the face of all the members red, he mixed red and yellow paint, decorating the hair with it and also the men only on each shoulder of their white shirts. On the left shoulder the man had an eagle plume ornamented with blue beads. All the women held an eagle wing during the dance, powdered with red paint, the men had a whip with an attachment of bells, which they would swing when rising to dance, at the same time saying:—

ī	wasā́cg·e-wic	bíəwə	hinnḗk·.	kam-bḗbìəwəm	bēk·.
By means	my horses to have	I wish	this.	I to own wished	I have it.

(Free translation: By means of this I wish to own horses. I wanted to own it, I am about to own it.)

In uttering the last word they would press their hand on the breast.

When rising to dance all the women had to face the mountains, holding their best blanket in the left hand and an eagle fan in the right. Sore-tail would then say: "After the camps are well-settled and when I came,—let us sing that song." This was the song:—

arī́a-k'ō	bōrək,	bacū́o	dū́ptum	bā́wik·.
From the rear	when I come,	my songs	two	I shall have.

miəxbā́riə	bát-bik·.
My medicines	I shall carry on my back.

díə-xaxuə	dī	watsick·ā́tuk.	bī	wī	ík·ara!	tsū́ke
All of you	you	are poor.	Me	me	look at!	Over the hills

k'ō	wa'kucī́ⁱwe,	tsū́ke	k'ō	bōk'.
there	I have stayed,	over the hills	thence	I have come.

bī	rakā́k' dɛ̀exem,	bōk'.	tsē'tic	kuc	barī́mbik·.
I	am an eagle,	I come.	Wolf Mountains	towards	I shall walk.

Cuts-the-picketed-mule gave the following additional details as to the equipment of members. Sore-tail made a robe from a buffalo hide with the hair; it was supposed to be an Eagle robe and he attached an eagle plume to the back. There were three such robes, and it was used by the old men in dancing. Sore-tail himself used a sharp-pointed cane in dancing; he painted it red and tied to it the tail of an old striped eagle. For the women he prepared four eagle plumes to be worn under the first dress. He told them they would acquire property through wearing them. They had to wear red dresses, on the shoulder blades there were rings of blue beadwork, and sometimes between the rings a beaded eagle. On the left shoulder was an eagle claw on a string. All wore abalone earrings.[1] The bracelet for the right hand was made of large cut beads mixed with abalone shells; that for the left hand was composed of greenish beads, one abalone shell, and one white shell, such as is sometimes worn in the ear. The women's breast ornaments consisted of a small package of Tobacco with beads, abalone shells, and elk teeth hanging down. Round the ankles they wore white beads and round the shinbone also a band of such beads. The middle of the moccasin was decorated with an eagle claw, on each side of which were two rings of beads. Sore-tail made a necklace of beads with an elk tooth hanging down; the men had a necklace with a big shell and white bead in the middle. All had wristlets of eagle thumb claws.

To the first four men he adopted Sore-tail gave whistles. The dress of the leader in the planting ceremony was fringed at the bottom; it was decorated with four rings of beads, one above the other, both in front and in the back, and with an eagle plume in the back. The hair was tied in front and painted red; the skin of a black buffalo calf with the hair was worn as a robe.[2] The leader's blanket is said to have been acquired from the founder on the occasion of the first planting. Then Sore-tail likewise tied one rattle to a woman's belt and another to a woman's dress about the thigh. On the same occasion a woman paid Sore-tail a horse loaded with gifts for the abalone and white-shell necklace.

The women's medicine bags were of elkhide, painted with ground paint, fringed all over and with blue beads along the edges; in the middle there was a cross of blue beads.

My informant said that she belonged both to this and the Yellow Tobacco chapter, but because of the paucity of members in the latter she plants with the Eagles. She considers herself a member of both because when adopted both chapters sang songs.

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[1] Subsequently the informant spoke of an abalone ring in the right ear, and a white shell one in the left.

[2] It is not clear whether this last statement refers only to the leader.

Gray-bull says that eagle feather fans are not peculiar to this chapter, although from Arm-round-the-neck's statement it would appear so. Perhaps they were originally associated with the Eagles and borrowed by other branches. Old-dog says they were sacred and were to be moved in different ways during the dance. The wrapping of the handle is decorated with beads.

ADOPTION.

General Account.

As explained, the right to plant Tobacco depends on membership in the society, which must be acquired by adoption. The adopter stands towards the novice in a parental relationship, which is expressed in a variety of phrases used in this connection. Thus, the adopter is called the *aksé*, parent, of the initiate and the entire proceedings are designated as *dā́kbisùə*, child-having. "He adopted me" is *mī rā́kēk'*, i.e., "he made me his child; and to express the idea that he and his wife were initiated together an informant said, *mī ā́pa wici'k' ūk'*, "in my company they caused her to be born."

Certain other relationships logically follow from this view of adoption. Gray-bull was adopted by White-stripe-across-the-face, who in turn had been adopted by Bell-rock; he regards and addresses these men as 'father' (*axέ*) and 'grandfather' (*axέ isá'ke*), respectively, while the wives of 'grandfathers' are called 'grandmothers,' *masa'kā́are*. This mode of regarding ceremonial relationships seems to be general, but for the following I have as yet no corroborative evidence from other witnesses. Of the four men who gave him songs during his initiation, Gray-bull considered three his 'grandfathers'; only Raise-up he regarded as his 'father' because he was about Gray-bull's age. Gray-bull adds that generally he addressed all those older than himself and older in membership as 'father,' or 'mother,' while those of about his own age were 'brother' and 'sister' to him. Individuals adopted into the chapter after his initiation addressed him either as 'elder brother' or as 'father,' according to their own age. Those adopted during the same season were, in a sense, joking-relatives;[1] however, they only joked if a man took back horses he had offered as a present to those adopting him, or was guilty of some similar breach of etiquette.

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[1] See Lowie, (a), 204.

So far as the ceremonial father-child relationship is concerned, its consequences normally persist not only in nomenclature but in sentiment and action as well. This naturally applies less to the most recent period than to earlier times. Still Gray-bull, while he no longer gives horses to an adopted daughter, presents her with money whenever he has any, and speaks with great veneration of Bell-rock, who, to be sure, is not only his 'grandfather' but also the most famous warrior among the Crow now living (1914). In former times Gray-bull would bring Bell-rock and White-stripe-across-the-face a whole buffalo or beef as a gift, and when returning from a successful raid he would give them some horses, while they would make return gifts.

Usually husband and wife are adopted together by the same individual. Indeed throughout the ceremonial performance women play a prominent part. It is certainly regarded as preferable for a couple to belong to the same chapter, and I know of at least one instance where a young man assisted his wife in a Tobacco planting although he was not even a member of the society. In this regard, however, there are individual variations. For example, while Little-rump's former wife joined the Yellow Tobacco chapter in his company, his present wife does not belong to the society, takes no part in the spring ceremony, and refuses to be adopted on the plea that she is blind. If she were a member of the Weasel chapter, her husband thinks she might sometimes join his chapter and sometimes her own.

Normally a member remains in the chapter into which he has been adopted. In recent years a number of the chapters have become practically extinct and the survivors joined other subdivisions of the society. A second reason may have been borrowed from the practices of the clubs and military societies: a chapter desirous of securing the membership of an individual might induce him to change his affiliations by a substantial gift. Thus, the Russell couple of Pryor, who entered as Egg people, were later persuaded to become Otters. This procedure impresses me as decidedly modern and not in consonance with the original spirit of the society. Finally, there is the possibility of a man's having a personal misunderstanding with his adopter. This might induce him to leave his chapter and seek admission to another, but he would have to pay only for the new songs he received. Two such instances were cited by Gray-bull. A Weasel had been in the habit of borrowing horses from him, and when refused on one occasion he left the chapter for another. Another man, whom my informant presented with an elk-tooth dress, gave nothing in return; there was a misunderstanding in consequence and the niggard resigned his membership. On the whole such cases must be viewed as exceptional since the ceremonial relationships assumed by adoption usually do not fail to affect an individual's personal attitude towards his fellow-members.

The motive for entrance into the society varies, but two reasons appear again and again; the novice is induced to join by a substantial gift, or he is fulfilling a pledge.

Members frequently present people with gifts in order to make them join; this seems to me connected with the notion that it is honorable to have stood sponsor for many new initiates. The individual accounts of my informants often refer to this feature. Little-rump gave Magpie a horse, thus inducing him to enter the Yellow Tobacco chapter; Muskrat similarly joined the organization after receiving a horse, and Old-dog allowed himself to be initiated by Bear-wolf on receipt of ten dollars. Sometimes a man is left in the dark for a while as to his would-be sponsor's intentions. For example, Bear-gets-up was living with the River Crow when a few lodges arrived from another band. The old men among the visitors called him. He took a horse to them and entered a tent, where he was entertained with food. Then an old woman gave him buckskin leggings and moccasins. They did not tell him what they wanted and he went out. Some time after this some one informed him that they wished to adopt him into the Tobacco lodge and that that was the reason for their giving him presents. He consented and was duly initiated. Of course, in this as in other cases, the value of the fee ultimately paid by the novice far exceeds that of the gift received by him. Thus Bear-gets-up paid four horses and an abundance of quilts and other property. This group of cases recalls the mode of admission into the old military societies and the purely secular clubs of today, and the practice may have been borrowed from them.

The second group of instances presents an aspect more consistent with the ancient seriousness of the Tobacco society and also recalls the ceremonial usages of other Plains tribes, such as the Arapaho. A man who was seriously sick or whose child was sick would make a vow to join the Tobacco society in case of recovery, fulfilment being entirely conditional. Also a man going on the warpath might say, "*acbā́'-ihé-ha-mā́ret-dək, bacúsuə àtbḗwik·*." (If I strike some enemy, I will join the Tobacco society). A few concrete variations of this motive will not be out of place.

When Cuts-the-picketed-mule's daughter was born, a warrior naming her promised that she would not die young, whereupon the parents declared that if she lived they would let her be adopted into the Tobacco society by him. However, the warrior was slain in battle and the man who had initiated him brought Cuts-the-picketed-mule food, dresses, blankets, and asked her consent for the daughter's initiation, which was granted. Old-woman had been very sick and her father announced that any one who cured her might adopt her into the Tobacco society; Pretty-enemy's father succeeded and accordingly initiated her into his chapter. Crazy-head had been imprisoned in an eastern jail as a consequence of his part in Wraps-up-his-tail's uprising and vowed that if he regained his freedom he would enter the Tobacco society.

Gray-bull's case is interesting, being essentially an anomalous case of the first type. He had joined a war party led by White-stripe-across-the-face. The leader ordered him to bring a horse from the Dakota camp but refused to accept it when brought, saying, "I want to adopt you." After returning to the Crow camp White-stripe-across-the-face invited Gray-bull to a feast and again announced his intention of adopting him. Gray-bull was eager to get the leader's war-medicine and asked whether he would give it to him if he allowed himself to be adopted. White-stripe-across-the-face answered affirmatively and accordingly Gray-bull was adopted that summer together with his wife. Aided by their relatives, they paid the adopter thirty-three horses, of which Gray-bull alone contributed ten.

There is a quite general consensus of opinion among the older informants that in early times the membership of the society was small and that older people predominated. A prairie-dog appearing to a visionary is believed to have made this prophecy: "When all of you join the Tobacco society, you will be poor!" In spite of this admonition more and more people joined, so that about 1910 perhaps a majority of the Indians, even young people, were members. The explanation in my opinion lies in the increased importance of the social at the expense of the religious factor. The pattern in vogue for increasing membership in the secular clubs was applied to the Tobacco organization, and the number of vows for the attainment of serious ends decreased in proportion.

After an adoption has been decided upon, the proceedings may be divided into (a) the candidate's preparation; (b) the public initiation in a specially constructed lodge; (c) the sweatlodge ritual; (d) the selection of medicines by the novice. The last three stages occupy only about twenty-four hours, but between the preparatory period and the initiation several months may intervene. The normal thing seems to be that a candidate is instructed during the winter, being taught to sing four Tobacco songs[1] and attending whatever dances may be celebrated by his chapter, and is publicly adopted during the week of the Fourth of July festivities. In former times the initiation took place earlier in the year, that is, immediately after the spring planting of the Tobacco.

In describing the adoption ceremonial I think it best to premise two connected accounts by trustworthy informants and to supplement these with personal observations and statements gathered from other natives.

A generalized account of the proper order of events was furnished by Plenty-hawk of the Pine chapter.

Sometimes a man who has fasted and dreamt in his day and enjoys a high reputation in the tribe is approached by a remote relative, accompanied by his wife if he is married, and asked to adopt the visitors into the Tobacco society.[2] The medicine-man then takes the couple to his lodge, and teaches them the Tobacco songs. After these songs some *isé* root is put on hot ashes, and the couple bend over to smoke themselves with the incense. Then the 'father' says, "You had better stay here to-night," and has a bed arranged for them. When they have gone to bed and the light has been extinguished, he says, "Now, listen until you fall asleep and dream." They listen to his rattling and singing until they fall asleep. The 'father' tries to make them dream. He sings four times, smoking during the periods of intermission, then he retires for the night. Early in the morning he bids his 'children' take a swim, preparing a breakfast while they are in the water. After the meal he says, "Tell me what you dreamt last night." The young man replies, "I had a dream last night, I saw the Tobacco dance and heard a song." Then the old man questions the woman, who replies, "I dreamt of the Tobacco dance and learned a song." The 'father' says, "Very well, I will make medicines for you. Now go and bring me two willows, one for each of you." When the willows have been brought, he sharpens them at one end, and plants them in front of his 'children.' Some Tobacco, wrapped in buckskin decorated with beadwork, is suspended from the husband's neck, and another piece of buckskin with Tobacco is pinned over the wife's heart. Then the 'father' bids the couple go home. Thereafter, when a Tobacco dance is celebrated, he calls his 'children.' He has prepared a good drum for the man, gives it to him, and takes him to the Tobacco dance. When they have arrived at the site, the old man takes back his drum, makes *isé* incense, smokes the drum, strikes it four times, and then returns it to his 'son.' All the singers are seated in a circle in one part of the lodge. The 'father' says to the young man, "Take the drum over there, and help the singers." The 'son' sits down and does as he has been told, while the girls dance.

Sometimes a sick person says, "If I do not die but recover, I will join the Tobacco dance and have someone adopt me." After his recovery the people send him food, which he accepts and distributes among his relatives. He is not taken in immediately, but from time to time his 'father' gives him food and property. After a considerable period of time has elapsed, the 'father' dispatches a messenger to the candidate, saying to him, "Go to So-and-so; we are going to have a Tobacco dance and will take this boy in." The messenger goes, and returns with the boy's answer. The ' father ' then takes the candidate to the dance, the novice walking behind the rest and entering last of all. A great medicineman is asked to sit by the novice, who neither sings nor dances, but watches the actions of the members. He is not permitted to fall asleep. Food is brought in and distributed, the largest portion falling to the candidate's share. After the performance is over, the members go home.

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[1] If he is married, he learns two, and his wife two.

[2] Here, then, the initiative is taken by the candidate, apparently without a vow.

Whenever the ' father ' again hears of a dance, he sends for the boy, telling him, " We wish to take you in again." The messenger brings the boy, who is once more taken to the performance. He walks in the rear, and is again made to sit next to the medicineman. A tobacco pipe is filled and passed round.[1] Food is distributed at the close of the dance, the boy again receiving the largest share. Then all the members go home. A week or a month later there is another Tobacco dance. There is a repetition of the same procedure, except that the medicineman is absent and some other distinguished man is hired to sit by the novice.

Finally the adopter says, " I will give my son some songs." He prepares a great meal and sends for the boy once more. *Isȩ* is smoked for incense, and the pipe is passed round. The man who sets the pipe circulating is the first to sing some of his songs. Certain women rise and dance. After two or three songs they sit down. Then everyone is asked to keep still and listen. The ' father ' has four distinct pieces of property prepared, and gives one to the first singer, who is known as the Tobacco-lighter. The rest of the property is given to others. After the Tobacco-lighter has again sung four different songs, a second man does the same, followed by a third and a fourth singer, who do likewise. The Tobacco-lighter says to the novice, " I have sung four different songs; pick out the one you like best." Then the 'father' chooses one of the songs for the novice. In the same fashion a song is selected from the three other sets. Then the Tobacco-lighter rises, and stands by the door, facing the center of the tent. The candidate stands beside him. The second singer takes the place on the other side of the novice. The Tobacco-lighter takes a rattle, and sings the selected song. All the singers take up the tune, chanting at first in a low tone of voice. They teach the novice to make the proper motions. He sings himself. The second time the song is chanted in a louder voice; this time they mean something by their song. The same song is sung three times. Then the second singer sings the song selected from his set. When this song has been sung, the two remaining singers take the candidate between them. First the singer to the left, and then the singer to the right, sings the song selected from his set. When the novice has learned the songs, all of them resume their seats. The candidate receives a rattle and takes part in the singing. At the close of the dance, the novice again receives the largest share of the food. They say, " We will let this boy be born." Then they have certain wise men erect an adoption lodge.

The Lodge-builder (Owner) orders the people to get four wagons for transporting the requisite poles. They get to a proper place, and look for straight trees. When they have found a suitable tree, they stand under it, and mash charcoal. The Builder puts some of the charcoal on his hands, rubs it on the tree, takes a rattle, and sings at the foot of the tree. Another man stands ready with an ax. As soon as the song is ended, this man touches the tree with his ax. A second song is sung. The same man again moves his ax and touches the tree with it. A third song is sung in the same way.

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[1] At this point Plenty-hawk explained that this is also done at the boy's first visit to the lodge.

At the fourth song, the tree-cutter strikes the tree, which is then cut down. All the poles are cut and put into the four wagons to be taken to the dance site. The Builder next says, "I want the boys to go for some ground-cedar (=juniper?)." They go, pack cedars on a horse's back, and bring the best cedar to the Builder, who calls on members of the Night-hawk and Big-Ear-Hole clubs, and says, "Help put up the lodge poles." The Sioux club and Last Dancers also assist in the erection of the lodge. Three of the poles are tied together near their ends with red willow branches and ground-cedars. A hide is wrapped over the willows and ground-cedars. This skin is taken, turned to the flesh side, and painted black. When this has been done, they all take hold of the poles and raise them. Other poles are set up on this foundation. The builders stand aside, and then go home.

The next morning[1] the Builder goes to several lodges, asking for the loan of lodge covers. Some people refuse. Two lodge covers are borrowed for use with the adoption lodge. The inside of the lodge has to be prepared. The remaining ground-cedars are spread in the middle, and charcoal is mashed up. Then a tall young man is called. The Builder and his wife sit near him, and another woman also sits by him. The charcoal is spread in front of the quartet, three of whom take the charcoal in their hands, while the Builder shakes his rattle and sings. The three others do not sing, but move their hands. When the song is ended, they put out their hands and pretend to throw the charcoal away. This procedure is gone through with two other songs, after which the charcoal is actually thrown on the site of the rectangular altar to be marked out later. The Builder then takes the charcoal and spreads it over the area of the oblong. Then they leave the lodge.

The 'father' now summons his particular Tobacco chapter, such as the Otters, Pines, or whatever group he belongs to. They assemble in a large tipi and begin to paint. There are two painters, one on each side of the lodge. They[2] carry their medicine bags on their backs. These bags are smoked with *isé* incense, and are opened and set to face the door. The people send for a willow branch. When it has been brought in, they tie a kerchief to it. The 'father' sends for his 'son.' When he arrives, one of the painters is asked to paint him; if he refuses, the other painter is requested to do the work. The girls participating are painted by the women, while one of the two painters paints the (male) dancers. The tyro doffs all his clothes, and is re-clothed by his 'father.' All those present rise. The singers sing a special song used when going out of the preliminary lodge. The person carrying a crown of ground-cedar moss gives it to the woman who is to lead the procession, and she is further given a pipe with tobacco. Four different songs are sung before they start out. At the fourth song they make their exit. No one is supposed to pass in front of the leader. After walking a certain distance, they stop and sing four songs there. They repeat this at two other halting places, then they enter the adoption lodge. The women are carrying their medicine-bags on their backs; they pass around the altar and set down their bags so that they face the altar. Then they call for one of the best war-captains,—one who has killed a whole family of enemies. He stands by the door, and some rotten wood is laid before him. Then he begins to recite his deeds. Taking up one stick, he says, "I went out with a war party from the Bighorn to Rosebud, and killed a whole family without getting shot. I hope all the people here will do something good." Then he lays down the stick, and the Builder calls for Medicine-crow (or some other noted brave). Medicine-crow dresses up in his best clothes and beadwork, paints himself stylishly, and enters the lodge. Medicine-crow's wife has placed a small pail of water about fifty yards outside the door. The Builder's wife stands at the door behind Medicine-crow, grasping the back of his shirt. The Builder shakes his rattle and sings, and the woman pushes Medicine-crow forward. This is repeated until, at the close of the fourth song, the woman again pushes Medicine-crow, who runs to his wife, dips a bucket into the pail, and runs back with it filled. The Builder cannot move back, but merely stands there with his wife. After returning, Medicine-crow gives the pail to the Builder, who presents him with an orange. Medicine-crow offers water to several chiefs. The Builder then announces in a loud voice that he desires everyone to keep still, because he wishes to speak. He speaks as follows:[1] "Your sacred Tobacco has grown well. Everything around where you have planted it has grown well, even the berries. You have gathered the Tobacco in good condition. This summer there is no sickness. This spring everything has grown well, and you have plenty of money." A pipe is brought in, and after it has been smoked with incense it is lit with manure and hot ashes. Then it is smoked. The singers begin to sing, so does the Tobacco-lighter, and the women take up the song. After this is completed, the musicians sing one of the candidate's songs. He rises, and dances to his four songs. His relatives bring in horses, blankets, and other property. Each of the four clubs receives a case of fruit as compensation for the services of its members, and they go off to have a feast. If any one of the relatives desires to give a horse to the 'father,' but has not brought it with him, he gives the adopter a stick as an earnest of the donation. After the boy has danced, the members of the society into which he is adopted begin to sing, commencing at one end of the line. The Builder selects for himself two pieces of red cloth from the property presented to the 'father.' At the close of the performance a special song is intoned. Every one takes a branch in his hands and moves it so that the leaves appear to dance. Then they raise the branches aloft. This is done four times, then this part of the ceremony is completed, and they leave the adoption lodge.

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[1] It is not certain whether the borrowing of lodge covers occurs on this or the following day.
[2] The women?

The 'father' says to the novice, "Go, bring me fourteen willows." When he has brought them, the Father constructs a sweatlodge and makes a pit in the ground. "Now, take a wagon and bring some stones from the hills." When the stones have been brought they are heated on a pile of wood that has been gathered together. The cover for the sweatlodge is brought. Then the 'father' says, "We will go out and bring in medicine-bags." They go to different camps for the bags. A certain man puts water on the stone. The four song-teachers sit in a row, with their medicines above them on the sweatlodge cover. Hot ashes are put into the pit, *isɛ́* is smoked for incense, and the pipe is smoked with it. The people smoke four times. The Tobacco-lighter takes some tobacco, and sets down part of it on either side of the door, as well as in the back. He says, "I shall[2] not have sickness this year. I shall reach the next season." Then charcoal is placed with the Tobacco. Horsetracks are painted with charcoal on the hands of the four singers, who express a wish to obtain horses. A little water is sprinkled on the stones. Four songs are sung, then four cupfuls of water are poured on the stones. Then the inmates of the sweatlodge call out to have the cover raised. The first man says, "May we reach winter!" The others cry, "ahṓ!"[3] When the cover is lowered again, the second man sings four songs. Then seven cupfuls are poured on the stones. When the door is raised, the singer says, " May we reach the next spring without death or sickness!" Again, the rest cry, " ahő!" The door is lowered and the third singer sings four songs. Just as soon as he is done, ten cupfuls are poured on the stones. The door is opened, and the man prays, " May we reach the time when the berries are ripe!" Once more the cover is lowered, and the fourth man sings his songs, after which as many cupfuls are poured on the stones as they please. When the door is raised, *isé* is chewed and rubbed over the sweaters' bodies, then they pass outside. The medicine-bags are laid on a blanket, with their openings towards the mountains. Tnen the bags are taken to a large tent, where the members of the adopting society assemble. The novice is called in. Horses and other property are presented to the members. Then the bags are opened, and the boy picks out from each one whatever medicine he likes, passing from one to another. The owner of each bag gives the novice a song, then he is a full-fledged member.

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[1] It will appear later (p. 153) that he is merely heralding the report of the water-carrier.
[2] The future tense here, of course, merely expresses a prayer.
[3] Ceremonial expression of thanks.

In the following description by Medicine-crow, mingling his personal experiences with general statements, still greater emphasis is given to the sweatlodge ceremony.

The oldest man in the Otter society was Hunts-the-enemy. He had been adopted by Restless-old-man, who in turn adopted Medicine-crow. One day Hunts-the-enemy brought meat to my informant, and said, " Eat this, I desire to adopt you." Medicine-crow accepted the gift, thus expressing his willingness. When he was initiated, all the Tobacco chapters were present. For three successive nights they sang and prepared a feast in his honor. On the fourth night Hunts-the-enemy presented quilts and other property to four different members, each of whom then gave Medicine-crow one song that was to be his special property. Thus he acquired four songs. Then an adoption lodge was put up. Medicine-crow was first taken to a large preliminary tipi, where the Tobacco chapters met. In marching towards the adoption lodge, they walked in single file. At the first stop, a man was chosen to sing. They walked some distance, then another singer was chosen. After walking a little farther, they selected a third man to sing at the next halting-place. Each of the singers sang four songs. After a fourth man had sung, they entered the lodge. A woman stood outside with a big bucket of water. The owner of the lodge picked out a renowned warrior, who sang as though praying. After this man had sung four songs, the Owner sent him for the water. He returned with the water, and entered the lodge. The Owner put some fruit into his mouth, which the warrior did not touch. Then the warrior prayed that there should be no sickness in the camp and that no horses should die that year. As soon as his prayer was ended, all cried, " ahő!" Then the owner selected a man who had killed enemies as they were seated round a fire. Only such a man has the prerogative of building a little fire in the adoption lodge, but first he recounts his exploit: "At such a time I killed an enemy who had a fire. I brought home a scalp, and all my people rejoiced. This year I hope that all my people will be glad."

In the old days a kettle with tongues was placed over the fire, but nowadays oranges and canned goods are obtained from the store. When everything was ready, a herald announced, " Everything is over, and all the relatives may bring property!" Then Medicine-crow's relatives brought in property. Young men of martial distinction intruded red-striped sticks into the lodge, and those within impaled tongues on the points. Thus people who had not known before discovered that the owners of the sticks had established a reputation as warriors. As Medicine-crow was a Lumpwood, the Lumpwood society gave away property in his behalf. The adoption lasted all day into the night. Each person present sang one or two songs, that is why the ceremony lasted so long. The property was divided among those present. When the time for eating had arrived, all held up some plant that was still green and sang the *hīra*[1] song usually terminating the Tobacco ritual: " What ground am I going to plant it in?" Then four pieces of red calico were picked out, and given to four members, who were requested to use it on the next day in building a sweatlodge. This calico is attached to a pole behind the sweatlodge and offered to the Sun.

On the next day the sweatlodge is built; the number of willows which may be used includes all the numbers containing four in the units' place, from 14 to 94, as well as 100. Stones are brought and heated. Before the stones are put in, the lodge is covered. The stones are passed in through the door, and ashes are sprinkled within. Only certain men have the right to manage the sweatlodge ceremonies. Before the stones are brought, coals are passed in, and the *isẹ* root, which bears fatten on in the summer, is smoked for incense. The people in the lodge smoke four times. No other kind of incense may be used. The Crow use this root as a kind of panacea. For a cold, it is chewed and swallowed. For sores it is chewed and rubbed on as a liniment. For a toothache it is placed on the tooth, for a headache it is kept in the mouth. The stones are then handed in, one after another. No one is permitted to speak. The rite is considered an offering to the Sun. When the fourth stone has been brought in, they cry, "ahṓ!" Each one then voices a prayer, such as, "I wish to have horses!" They undress. Water is handed in, and finally a cup is slid in along the ground to the man at the left of the door, who slides it on to the man in charge of the lodge. This headman then takes some water, and sprinkles it over the stones. The novice is inside. Everyone sings. The headman sprinkles four cupfuls. The people inside sweat. Then the door is lifted at the order of the headman, and one man prays as follows: " Sun, we are doing this for you! Let us live until the next winter." All the people, inside as well as outdoors, cry, " ahṓ! Let us live to that point!" The door cover is lowered. At this point Medicine-crow was washed with a mixture of *isẹ* and water by his adoptive ' grandfather,' who prayed as follows: " I want him to be an old man. All you above, let him live to be an old man." The sprinkler then poured seven cupfuls on the stones. Four songs were sung; then the door was raised again by request. Some one says: " You in heaven, you had us make these offerings! It is in your honor that we are making them!" The door is lowered, and the man next to the last sprinkler pours ten cupfuls on the stones, after the third man's song has been sung. When the door is raised again, prayers similar to those previously uttered are recited When the lodge is closed once more, the fourth man pours ' uncounted ' cupfuls on the rocks. Then the watchers outside are requested to remove the sacred Tobacco bags that have been placed on the top of the lodge. These bags are laid on quilts on the ground, and made to face the mountains. After the sweaters have been informed that the bags have been taken off, they scourge themselves, and each one recites a prayer. Then the manager cried, "Throw off the door! We want to live until the next winter!" " ahṓ!" The door is not lifted but thrown aside, and the sweaters go to the river, where any sickness that may be on them is washed away.

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[1] This is said to be the way one woman friend calls another.

While Medicine-crow was in the sweatlodge, his wife had been preparing a feast. This was announced by a herald. Then the members of the adopting chapter said, "Let us take our medicines to his tipi and give him some." They went over there with their drums; these drums are owned by certain individuals. The medicine-bags were smoked with *isé* incense, then all the medicines were taken out. Medicine-crow had had a number of horses saved for this occasion; for each medicine he selected out of those exposed, he paid one horse. He also picked out one bag. Three songs were sung, and three times he pretended to put the medicines into his bag. This he finally did at the fourth song. This is how he became a member of the Otter chapter. Thenceforth the Otters treated him as one of their own family. At a later period he had a vision of strawberries (see p. 117) in accordance with which he modified the ritual and the chapter came to be called after the Strawberry.

The Candidate's Preparation.

Except for the time of initiation Arm-round-the-neck's experiences seem typical. Sits-on-the-bear offered him money, comforters and meat, thus inducing him to be adopted into the Weasel chapter. This happened in the spring, but the initiation did not take place until autumn. In the interim Arm-round-the-neck and his wife were taken to a Tobacco dance four times. On the first three evenings they received food and looked on while the dance was performed by the members. On the fourth night my informant was given two songs and his wife received two, according to the usual procedure. The song-givers were Dḗk·ōc, Coyote, Crooked-nose, and Long-ears. On this occasion the couple were at last allowed to dance in the following fashion. Arm-round-the-neck stood on the right side of the first song-giver and danced with him; then he danced similarly with the second song-giver, a different song being intoned each time. His wife, in corresponding manner, danced with the two other song-givers.

Child-in-the-mouth and Gray-bull were prepared in much the same fashion but during the winter, the initiation being consummated in the spring according to ancient usage.

Cuts-the-picketed-mule was not initiated together with her husband, though into the same chapters. During the preparatory period she was taken into a lodge, where the dance was held on four consecutive nights. She had to dance on the last night when she received the songs. She had brought in some buffalo robes, two bottles of whisky, and other gifts. She was pregnant at the time and was bashful, not knowing how to dance; she was trembling all over. The members all made fun of her.

Muskrat was adopted because her husband was already a member. For some time her adopters brought her such eatables as berries, then they announced, "We have done this long enough, we'll take her in to sing now." So they took her into the lodge on four consecutive winter nights and on the fourth they asked her to dance. Two women got up and danced with her.

THE PUBLIC INITIATION.

As explained in Plenty-hawk's account, an adoption implies a special adoption lodge (*actsitúa*). As might be expected, the institution of the lodge and the details of its arrangement are derived from visions. To own and superintend the erection of this lodge is a highly prized ceremonial privilege, the Owner and his wife playing an important part in the proceedings. Indeed, while there is no strictly hierarchical grading of officers in the society, Gray-bull held that the Owner of the adoption lodge ranked highest after the Medicine-bearer in the procession of the planting ceremony. Theoretically the Owner performs a variety of functions himself; in practice he frequently pays some one else to act as delegate, a different person for each task. Some chapters are without members owning the *actsitúa* privileges and are obliged to appeal to other chapters for help. Generally speaking, there is no spirit of exclusiveness between Tobacco members of different chapters. At an adoption members of any chapter may attend, though presents are given only to the initiating chapter.

On July 3, 1910 two initiations were celebrated, and I witnessed the major part of one and a lesser portion of the other. The two lodges erected for these adoptions were similar to each other and to those seen in the summer of 1911 (Fig. 5). The following notes refer mainly to my earlier observations.

The frame of each lodge consisted of ten large pine trunks,[1] joined at the top and tied there with a mass of leafy twigs. At a height of about three feet from the ground willow branches were laid horizontally from pole to pole and tied to the poles. The lodge was imperfectly covered with canvas, so that the sunlight could stream in from one side. The most conspicuous part of the unoccupied lodge was the *arăca*, which for want of a better term I will call the 'altar.' At its head the members afterwards deposited their bags and in one of the two lodges two slender sprigs of willow with leaves were planted there as well. The altar

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[1] Charges-strong said that cottonwoods should be used.

(Fig. 9) was an oblong space of cleared ground two and one-half by five feet. Each of the longer sides was bounded by a row of willow arches, and outside of each row there lay a parallel log of equal length. Within the cleared space there were four rows of juniper sprigs. A sacred oblong of this general type is used by various Plains tribes in their ceremonials, perhaps most frequently in the Sun dance (Arapaho, Cheyenne, Dakota).

According to Gray-bull the altar forms part of the original vision of the Tobacco dance. Plenty-hawk explained that it represents the Tobacco garden, the arches standing for its enclosure. Three cow chips on the altar serve for fuel when the Pipe-bearer lights his pipe and burns incense. Sometimes the entire oblong is strewn with juniper, but in 1911 the half farther from the medicines and willow sticks was bare. The juniper represents the Tobacco when green; it is not removed after the adoption, indeed the entire altar remains intact. Thus, the logs are held sacred and must not be used for firewood. Pretty-enemy said the oblong represented the Tobacco garden and the juniper the material anciently burned on it before planting.

Bear-gets-up stated that the altar was generally in the exact center of the lodge and the medicine bags were laid on the short west side of the oblong. He added, however, that the details in the arrangement depend on the Owner's dreams.

At 10 a.m. I found the adopting Weasel chapter already gathered in one of the tipis, which I will call the preparatory tipi. The drummers occupied one side, the women and spectators the remainder of the space. In the center two slender willow branches were stuck into the ground at some distance from each other. An elderly woman seated near the middle was painting the members. Some of the women had already been painted. There seemed to be two groups of women, distinguished by their paint, and later these groups danced at different times. One group had red paint on the entire lower part of the face including the upper lip. On each cheek was traced a blue design consisting of a stem with two pairs of branches symmetrically arranged, forming the beginning of a herringbone pattern. The second group were not painted in uniform fashion, in fact some lacked all such decoration. The rest had the lower half of the face painted red like the first group, but on each cheek some had slanting red lines suggesting fingerprints, while in one case two short vertical lines were observed. In the course of the hot summer day the paint was naturally obliterated by perspiration.

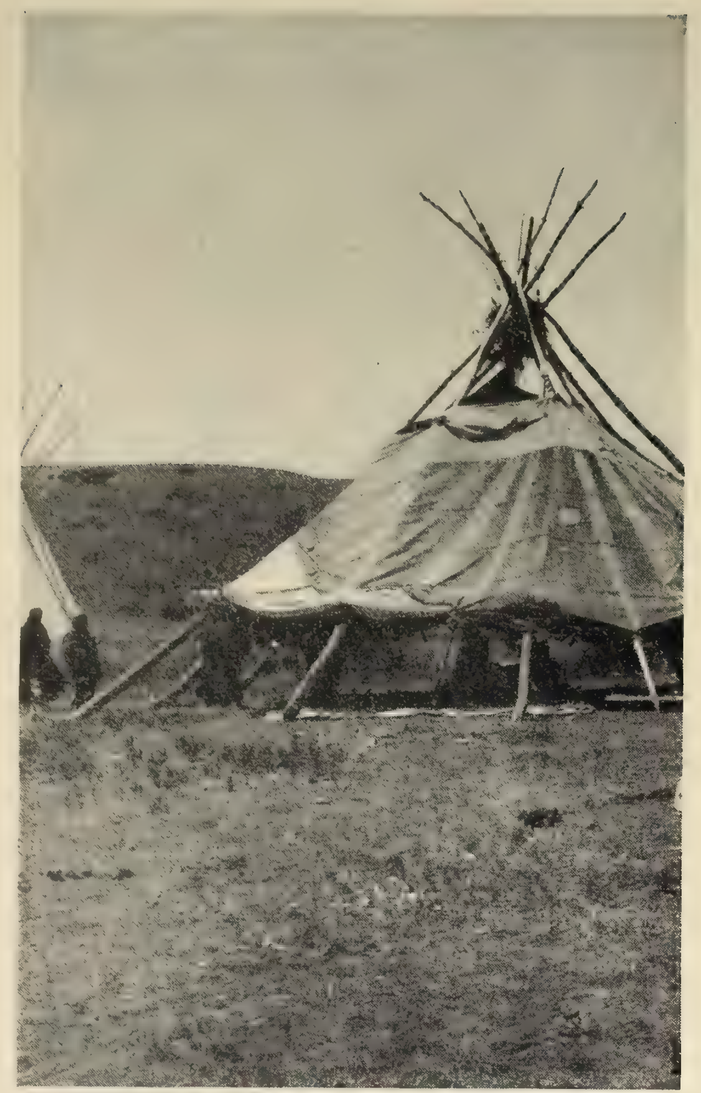

Fig. 4. Entrance into the Tobacco Adoption Lodge.

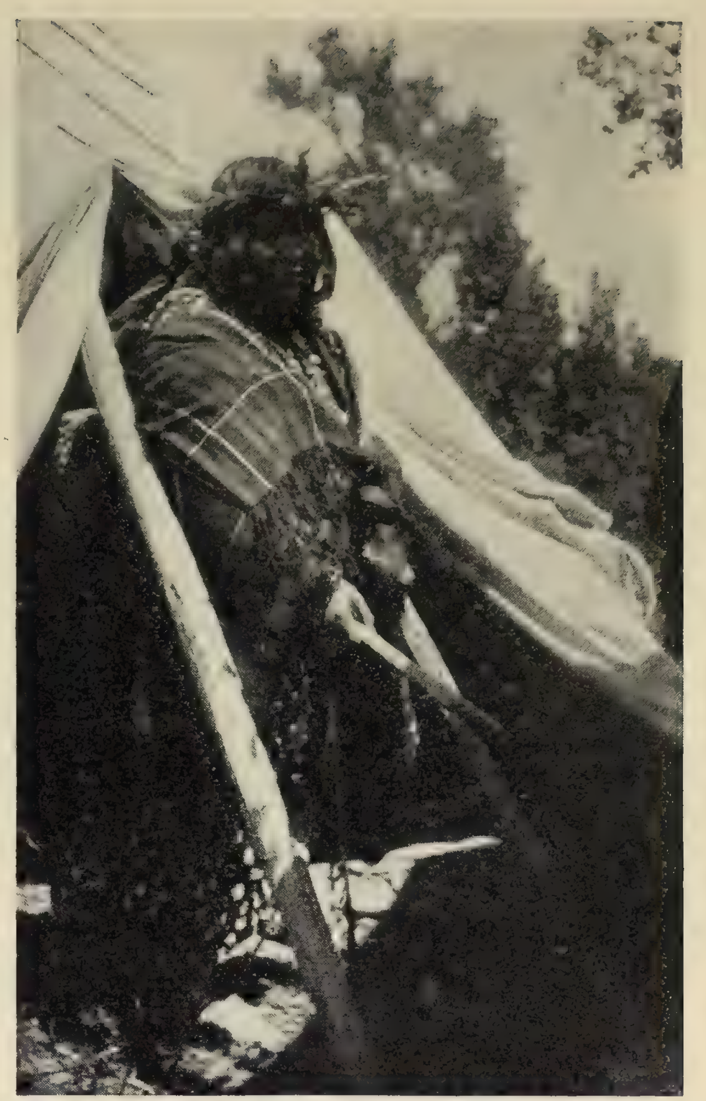

Fig. 5. Leader of the Procession leaving the Preparatory Lodge with her Pipe.

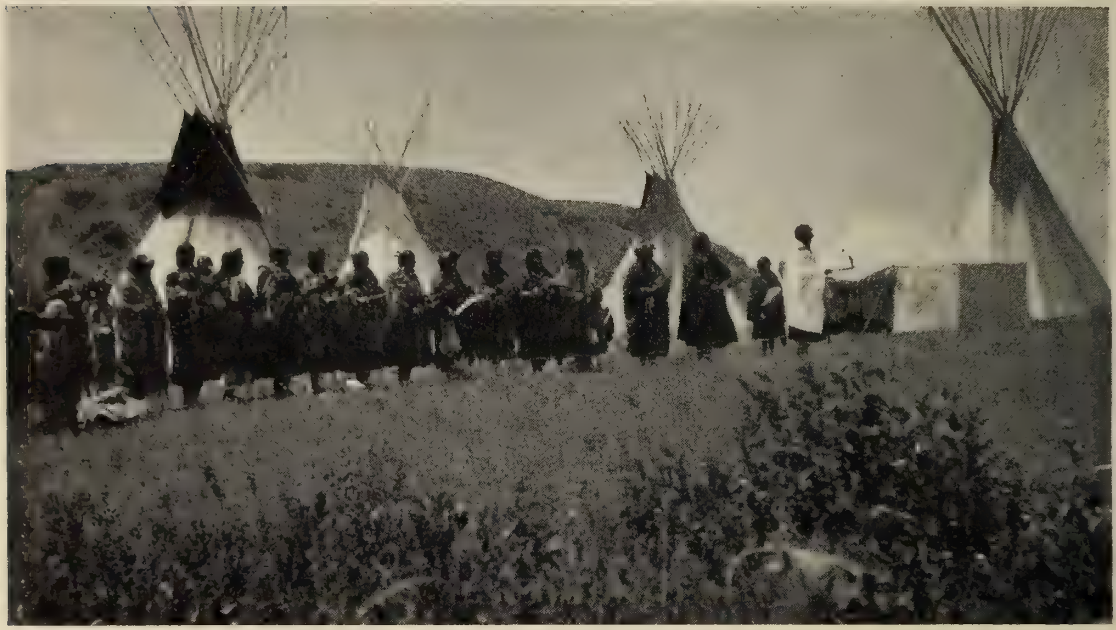

Fig. 6. Stop on Way to Adoption Lodge.

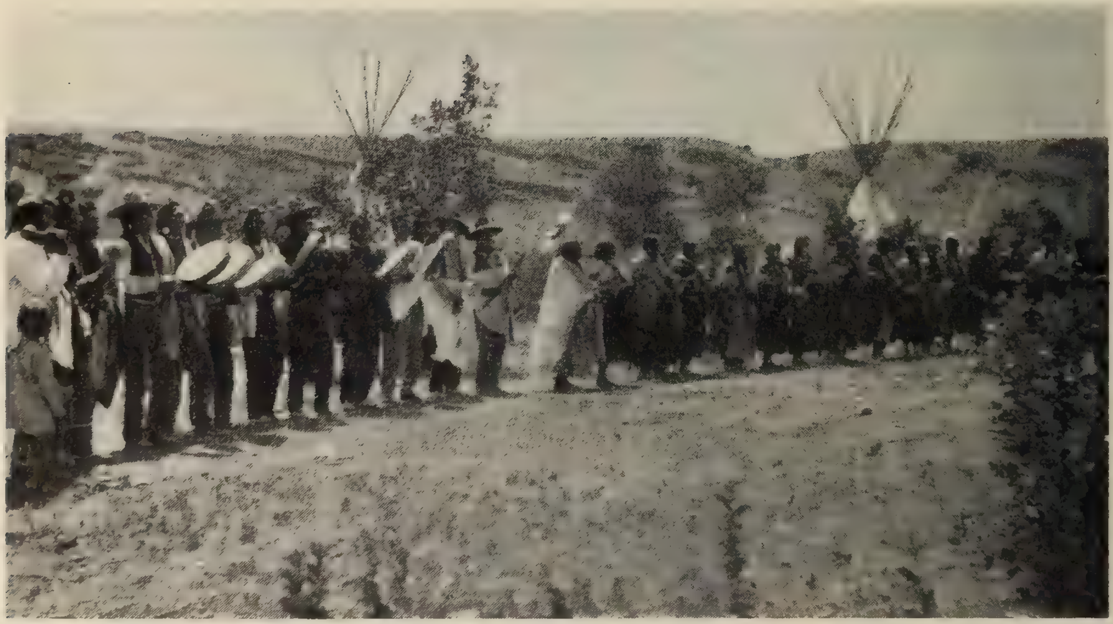

Fig. 7. Leader with Pipe heading Procession to Adoption Lodge; One of the Stops on the Way.

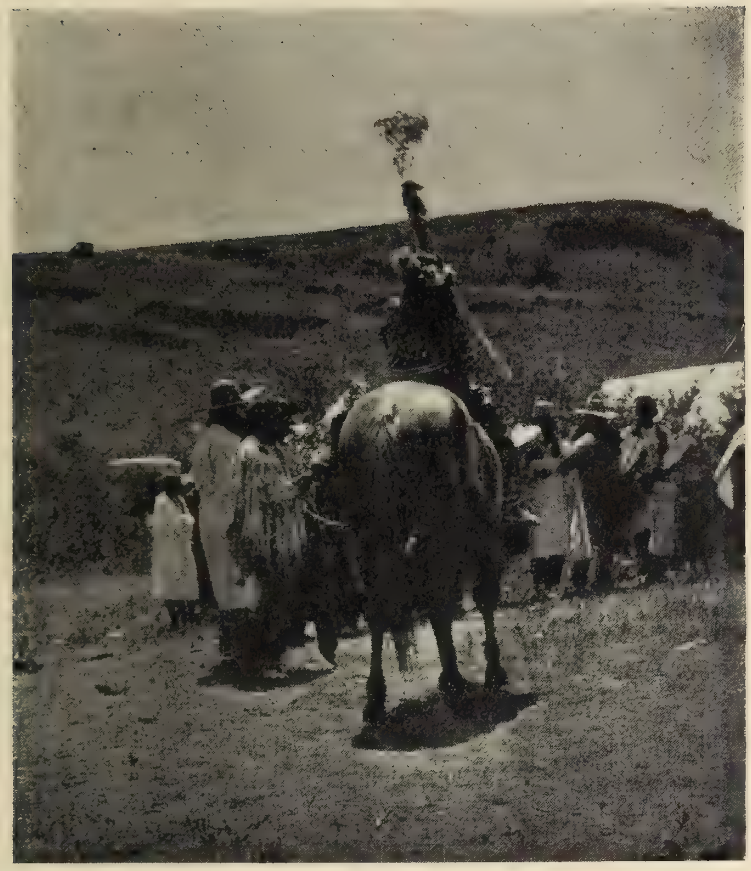

Fig. 8. Medicine-crow, at the End of the Procession to the Adoption Lodge, leading the Mounted Candidate, who is holding Aloft a Willowstick.

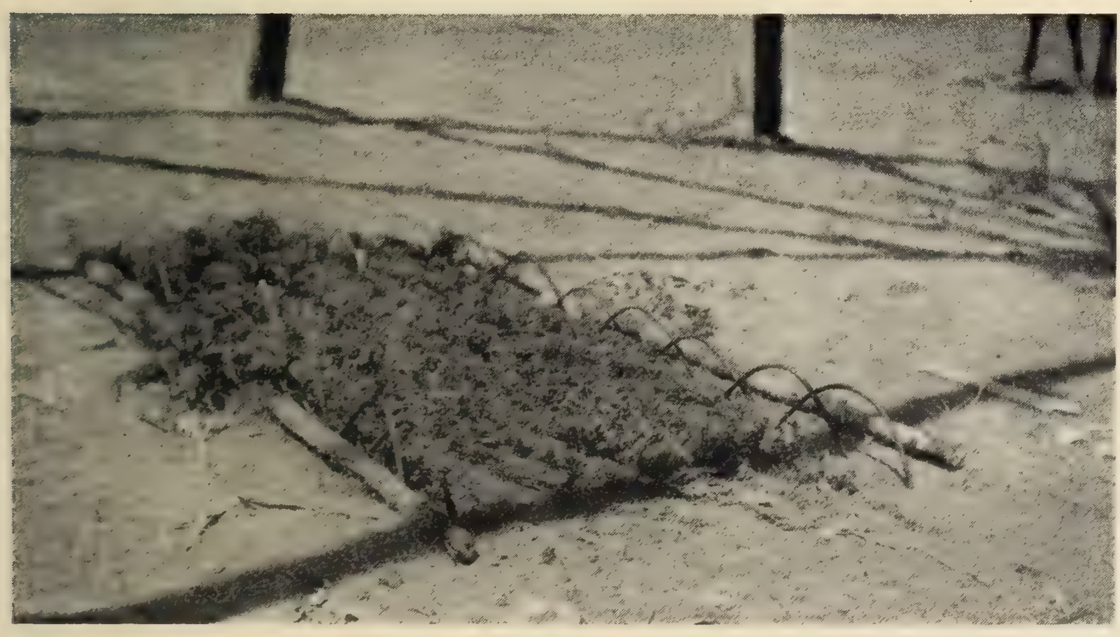

Fig. 9. Altar in the Adoption Lodge.

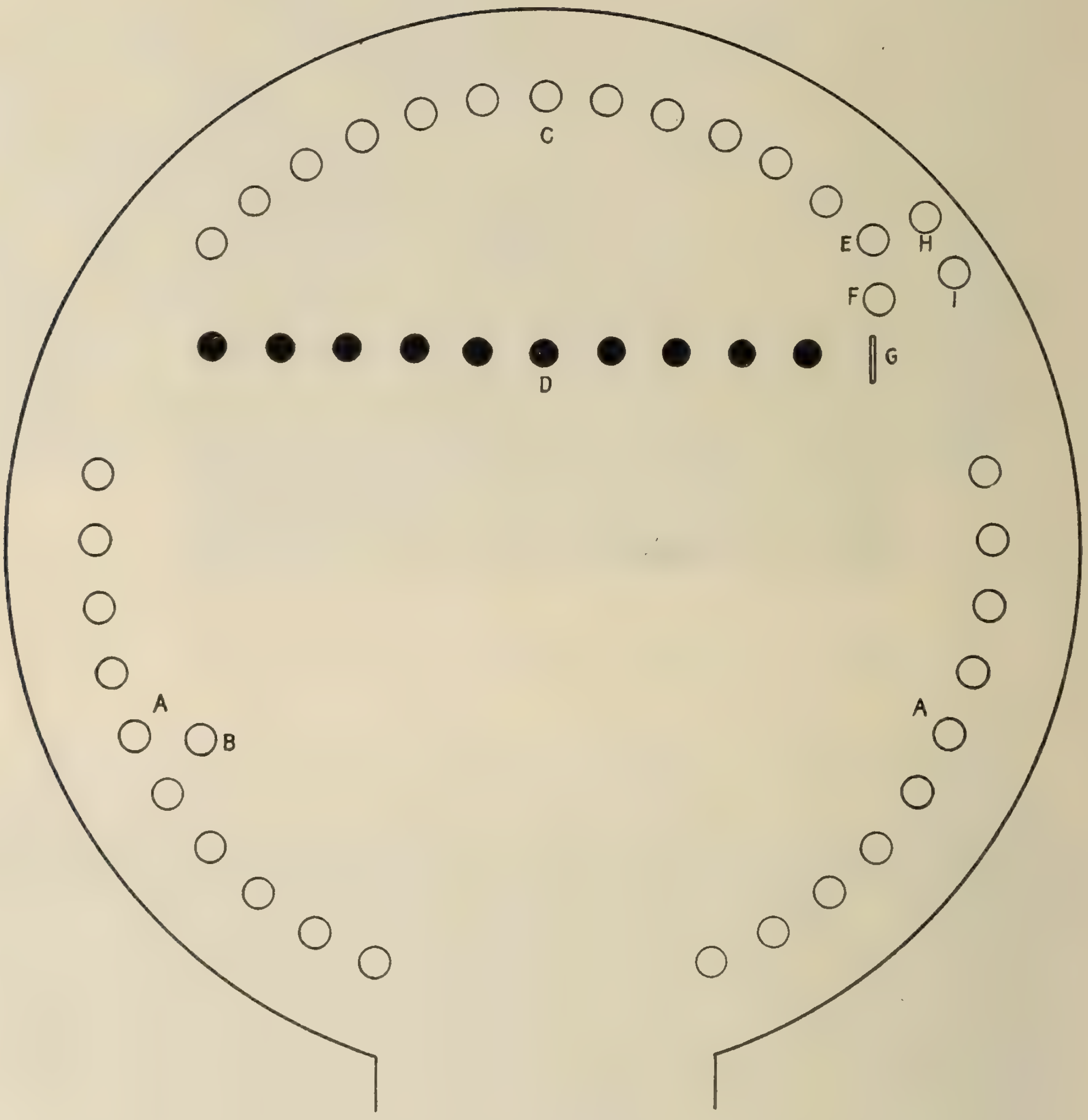

Fig. 10. Diagram of Preparatory Tent at Strawberry Adoption. *a*, women; *b*, painter; *c*, drummer; *d*, Tobacco bags; *e*, Medicine-crow; *f*, Old-dog; *g*, willowstick; *h*, third rattler; *i*, another man.

In July 1911 I attended a Strawberry adoption, at which Medicine-crow's wife decorated the women with four blue dots on each cheek arranged in a line slanting downwards and outwards from below the eyes. She painted herself with a single blue dot below the eyes and much larger than the dots on the other women. At a Wolverene initiation witnessed in the same year the women had a small semicircular area in dark red in the middle of the forehead, the diameter coinciding with the hair line. On each cheek a large quadrangular area was painted in the same color, slightly curved towards the nose and extending to the ears. The Painter decorated herself merely with a horizontal bluish line across each cheek.

Later I secured a number of comments on the painting employed. An informant from the Mission district said that usually only one woman paints the members, following a dream; the second group must have been decorated by a different woman. The branched design was said to represent the Tobacco and is accordingly called *iʿtsiʿtsìə*; it is characteristic of one old woman, who always uses it. Gray-bull confirmed the interpretation of the blue Tobacco design and said that it had been seen in a vision by someone sleeping by the side of the Tobacco garden. The finger marks, he thought, represented another part of the plant. Oddly enough, he added that the group with the Tobacco design belonged to the Wolverene chapter, the second group to the Tobacco chapter. Bear-gets-up likewise interpreted the difference in paint as due to different chapter affiliations.

Since the painting depends on visions, it forms a ceremonial privilege and there are no fixed rules concerning the designs. The adopter does not himself paint the members and novices. The number of Painters depends on the number of those who have acquired the privilege in the respective chapters; some chapters have only one painter, and usually there are not more than two. Gray-bull said it depended wholly on the Painter whether she should use the same decoration on herself as on the other members.

Like other ceremonial privileges that of painting is transferable. A woman acting in this capacity on July 7th, 1911 had only recently purchased the office from an old woman. Gray-bull himself had once acquired the painting privilege from his own mother, paying her an ermine shirt, a horse, quilts, and money. He sold the right to Plenty-coups for four horses. He owned one style for men, another for women; the latter was put on by his wife. The men's faces were decorated all over with red trade paint; the forehead and face including the cheek bones were daubed all over with red ground-paint; then black dots were scattered over the painted area down to the cheekbone. The women had their faces painted yellow all over, then a red line was drawn next to the hair line and the neck was painted yellow; on the crown of the head a yellow-painted eagle feather was fixed; and an ermine skin was tied to a lock of hair on the left side.

In the Strawberry chapter Old-dog and Medicine-crow had the painting prerogative; they would paint the men, and their wives the women. Medicine-crow had dreamt the designs himself and transferred the right to Old-dog without himself renouncing it. When there were many men present, each painted half of them. They would put red paint on the forehead and backwards over the hair and draw slanting lines down from the eyes with their fingers.

When the painting had been completed, a number of dances were held in the preparatory tipi. The men beat drums and the women rose repeatedly with unwrapped medicine objects, such as stuffed duckskins, and gently swayed their bodies without moving from the spot. After a number of these performances everyone rose and the woman who was to lead the procession from the preparatory to the adoption lodge took a position near the exit carrying a catlinite pipe (Fig. 4). She wore a crown of juniper leaves and a skin in the back of her head, while the other women wore a feather in the back of the head and a strip of weasel-skin in the front part of the hair. According to Medicine-crow the crown represents a wish for welfare, horses, etc., on behalf of everybody. The leader is the wife of the Owner; the pipe generally belongs to her husband and is not smoked subsequently but deposited on the altar.

In the Strawberry adoption of 1911 there were about twelve drummers in the rear of the preparatory tipi, while Medicine-crow, Old-dog, and another man shook rattles. The women, most of them wearing elk-tooth dresses, were arranged in two arcs of a circle, one on each side of the entrance. Somewhat to the rear of the center the Tobacco bag had been deposited in a row, with the willow stick at the extreme right of this line for one entering the lodge. The arrangement may be seen at a glance from the diagram (Fig. 10).

Before the tent was left, eagle feather fans previously kept in a bundle were distributed to all the women. The reason for having only one willowstick was that a single individual was being initiated. Each willow on such occasions has attached to it a kerchief and a small Tobacco bag. Medicine-crow explained that the object of the ceremonially prepared willowstick is to make the powers above see the candidate and protect him; it symbolizes safety until the season when the willow shall have green leaves again. The Tobacco bag is taken back by its owner after the ceremony. Gray-bull once remarked that the small bags used on the willowsticks contained Tobacco seeds on which the figure of a star—taken to be the morningstar—is visible. Such seeds are regarded as especially valuable, being as rare as the four-leafed clover.

To return to the adoption of July 3, 1910. When the Owner's wife had taken a position at the exit, the musicians drummed and sang a song, at the close of which she made one step forward, only to resume her former position. Two more songs were sung, and at the close of each she pretended to march out in similar fashion. At the end of the fourth song she really made her exit (Fig. 4), followed by the women in single file and then, at an interval of about six feet, by the drummers, all of whom are invariably men. There were about twenty-five women and fifteen men in the procession (Figs. 6, 7). No person was permitted to get in front of the leader. They stopped four times on the way to the adoption lodge and at each stop songs were sung. Each candidate carried a willowstick for which he paid a horse. After the fourth stop the line entered the lodge. In the Strawberry adoption of 1911 the novice, a girl of twelve named Bā̆tdɛc (She-joins), rode horseback at the tail of the procession, her horse being led by Medicine-crow (Fig. 8). In the old days, Arm-round-the-neck stated, the novice always walked. At one of the performances seen the adoption was by proxy because the child to be initiated was at the Mission school.

The drummers need not be members of the adopting chapter but must belong to the Tobacco society. The best singers are chosen for the office and receive fees for their services. According to Plenty-hawk the privilege of drumming on such occasions must have been specially acquired. If all holders of this prerogative were to refuse to act their part, the ceremony could not be performed; on the other hand, the presence of a single duly qualified drummer would suffice. Several men had rattles instead of drums. Gray-bull declared that anciently all the musicians had only rattles but the young people introduced drums. The relative antiquity of rattles in this connection is generally accepted. According to Medicine-crow the drumming is meant to imitate thunder. Gray-bull said that the Wolverenes danced to a peculiar sort of devil's tattoo on the drum, but usually only the men did so.

Singing at the four stops is another ceremonial prerogative. Each time a different person sings, the drummers take up the song, and the people in the procession dance in position.

After entering, the drummers took seats on the west side of the lodge, ranging themselves in a small unclosed ellipse west of the altar; south of them sat the rattlers. The women of the two groups noted in the preparatory tent sat to the south and north, respectively, of the foot of the altar.

Owing to the novelty of the proceedings for me in 1910, some interesting happenings at this stage escaped my attention. However I recorded them in the following year and will supply the deficiency on the basis of my later observations, supplemented by notes secured from one of my most trustworthy informants.

Immediately after the entrance of the procession into the lodge, or very soon after, a brave warrior tells a coup and another is dispatched to bring water. The latter is called *ak'ī́cde*, 'the one who goes for drink.' Formerly he had to run to the creek for it, but nowadays at Lodge Grass a large vessel with water is placed near the lodge and the brave takes a small bucket with him, runs to the larger vessel, fills his container, and comes dashing back. According to Gray-bull, this episode represents a war party's coming back with water and symbolizes a victorious return.

On July 7, 1911 the following was the sequence of events. Medicine-crow got up and told the story of how seven Dakota had been seated by a fire in a canvas tipi, how a party of Crow had come down upon them and destroyed them, the narrator playing an active part. He broke some little sticks and threw them on the bare part of the altar to symbolize the fire. Then Packs-the-hat got ready to run for water; having struck two coups in his day, he was eligible for this office. He stood by the entrance, on some juniper leaves, which symbolized the wish to see the next year, when everything would be green and safe. Banks (the lodge owner), and Banks's wife stood behind Packs-the-hat and swayed him four times, the husband shaking a rattle and singing a song. The songs sung at this juncture rather resemble praise-songs[1] than Tobacco songs; the following is typical:—

dī	wasa'kā́m	bī́ wik·;	kanā́^{a}kowe.
You	as my grandmother	I shall adopt;	go home.

Finally at the fourth time the couple pushed Packs-hat out of the lodge. He ran, filled his vessel, and returned running, whereupon he made a report to Banks in a very low tone of voice. This represents the report of a returning war party

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[1] See Lowie, (a), 241.

Gray-bull, who had several times acted as water-bearer in the ceremony gave me the tenor of the runner's report in two slightly different, but substantially similar versions, which follow:—

1.

dúxira+um,	hɛ́re	barē̃k·.	mirəxbā́ke	kuc
They went on a war party,	among them	I went.	People	towards

basū́m,	dapī́um,	ictáxia	burutsík·.	kam-bá'kúk.
they ran,	they killed,	a gun	I took.	Then I came back.

ṓpe	awúsarùəc	bā́wim	ahúm	matsā́tsk',
The Tobacco	you (pl.) had planted	when I came	abundant	extremely,

ā́ᵃxe	bā́tsua	ahúm	matsā́tsk'.	karakṓm	bṓk'.
round about	chokecherries	abundant	extremely.	Then	I came.

acɛ́	bā́wim,	mā̀bāku'pé	hámnɛtk'.	ítsik·ā̀ta
The camp	when I reached,	sick people	there were none.	Well

ṓpe	dá'kurutū̀k'.
the Tobacco	you took back.

(Free translation: I accompanied a war party. We charged the enemy and killed some; I captured a gun. Then I returned. When I got to the Tobacco you had planted, it was growing in extreme abundance. Round about all berries were extremely abundant. Then I came home. When I reached the camp, there were no sick people there. Peacefully you were harvesting the Tobacco.)

2.

bā́tsuə	ṓoce	ítsik·āta	bī́uk	.	bā́isànde[1]
Chokecherries	ripening	well	we shall arrive.		Sickness

hámnɛtk.	dúxiwarɛm,	,	barapī́ok	,	dā́akce	wā́ritsík·.
there is none.	I went on a war party,		they killed some,		a coup	I struck.

barasɛ́	ítsim,	kambṓk.	ṓpe	awúsaruəc	awákak.
My heart	was good,	I arrived.	The Tobacco	you planted	I saw.

ṓpe	ahúk.	ṓpe	awáke	wíawak.	bōm,	ṓpe
The Tobacco	was plentiful.	Tobacco	I see	I wished.	I came,	Tobacco

apā́re	watsā́tsk.	Apsā́roke	ítsik·ā̀te	ā́ra'kuk.	bā́tsuə
grew	excellently.	The Crow	well	are faring.	Chokecherries

ítsik·ā̀ta	dirúsuk.
well	you eat.

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[1] Or: ba'kupé.

(Free translation: We shall live until summer when the berries are ripe. There will be no disease. I went on a war party, they killed some of the enemy and I struck a coup. Joyfully I came home. I saw the Tobacco you had planted; it was plentiful. I wished to see the Tobacco, it is growing excellently. The Crow are faring well; you shall eat berries safely.)

After the runner's report the Owner says to him, "It is done, go!" (*k̦arak'ṓwik'*, *dā*!) Then he cries out aloud what the water-carrier has told him *sotta voce*, and the crowd shout *ahō*! The water is passed about and drunk by the singers and the old people in the lodge.

After entering the lodge the leader of the procession hands the pipe to her husband, the Owner. Any redstone pipe may be used for this purpose. It is filled with trade tobacco not the sacred Tobacco, which was not smoked as it was believed to produce a rash on the face. From one account it would appear that the Owner lights the pipe and hands it to all members present. Other notes suggest that the tobacco-lighter (*ak'-ṓp-aràxia*) need not be identical with the Owner. At all events he is an important personage, as shown by the fact that in the Strawberry chapter Medicine-crow, the founder, acts in this capacity. It is the tobacco-lighter that sings the first song with his wife for the benefit of the musicians, who are expected to catch the tune at once; sometimes he will repeat it for them. Then they intone the song and all the members rise and dance to it. According to Lone-tree, the tobacco-lighter in a manner determines the subsequent procedure: if he sings three songs, all the later singers do likewise; if only two songs, the rest also follow suit. If he begins with an eagle song, the women dance with eagle feather fans; if he sings a weasel song first, they take weasel skins into their hands. The tobacco-lighter sits next to the door, and no one must pass in front of him; he is also entitled to get food before all others, taking precedence of the other singers, whose turn comes next.

Medicine-crow remarked that the Tobacco dance was the only time when the pipe might be smoked when passed backwards. Those who do not smoke offer a prayer. Old men sit behind the tobacco-lighter. The songs start from them and end with the singers seated in the middle. The tobacco-lighter then smokes the pipe with incense, lights it a second time, and hands it round again, beginning with the man in the middle facing the door. The last man to receive it passes it over his head and sends it to the men who are not acting as musicians. According to Medicine-crow, an outsider is not permitted to enter the adoption lodge unless the real owner of the pipe has delegated to him the office of taking charge of it.

The essential part of the proceedings following the initial song seems to consist in a joint dance by each novice with the four song instructors and the final song that regularly closes the adoption ceremony. However, there were a great many other dances by various members of the society.

To revert to my naïve observations in 1910. The women were by far the more frequent dancers. When the drummers had intoned a song, several women would rise, unwrap their medicine bundles, and begin to dance in the same way as in the preparatory tipi, holding in their hands such medicine objects as stuffed skins of weasels, otters, or birds. At one dance I saw two women holding a weaselskin in each hand. Some did not use such objects in dancing, but substituted sprigs of willow or eagle feather fans; still others were holding nothing at all. Some clenched their free hands, others extended their fingers with the palms down. In every case the hands, with or without skins, fans or sprigs, were alternately advanced and drawn back, or raised and lowered, in a peculiar convulsive manner. Sets of dancers took turns, each corresponding, it seemed, to a set of four songs.

Lone-tree explained that the manner of extending fingers or clenching hands depended on the song. He, as well as others, described the movement with clenched hands, thumb up and little finger down, as distinctive of the Tobacco dance proper; to hold the thumb and finger of the clenched hand in one horizontal plane is distinctive of the Bear Song dance, but this movement may be introduced into the Tobacco ceremony.

At noon preparations were made for a feast. The relatives of the boy who was being adopted piled up quilts and other presents for his adoptive mother, all these gifts being taken charge of by a young woman. At this time the members of the Nighthawk club were lined up in a body outside the lodge. The novice was a member of their organization, hence after the quilts had been heaped up each Nighthawk approached and contributed a quarter to help pay his Tobacco initiation fee. Since my interpreter, James Carpenter, was a Nighthawk, I likewise contributed this modest sum. In return we received a case of fruit, which was carried off to a Nighthawk tent, where the contents were distributed in the most equitable fashion conceivable.

Early in the afternoon I returned to the adoption lodge. Again the women were conspicuously more active in the dancing. However, when the male novice was to dance, two men took him between them and danced with him at the foot of the altar. At the first dance all three held up willow sprigs; the second time, feather fans; the third time, rattles; and the fourth time they merely moved their hands. The novice resumed his seat and soon afterwards made his exit from the lodge. The girl novice was taken to dance in a similar way by practically all the women not decorated with the blue cheek design; one woman stood at her right, all the rest at her left.

Gray-bull said that the proper way was for each song-contributor to sing and dance with the novice, seating himself as soon as he has completed his song. The additional statement that three must always remain standing is not clear to me. Next the adopter is supposed to ask various adoptive relatives to dance with the initiate. For married novices the procedure evidently varies in the manner to be expected: when Gray-bull was adopted he danced with the *two* men, one at a time, who had taught him his songs, and his wife similarly danced with the two women who had instructed her. Probably there was considerable variation at this stage for Arm-round-the-neck speaks of "about five" Weasel men dancing with him for each of his two songs, while "more than five" women danced with his wife. After their four songs had been sung, he adds, he and his wife did not dance but merely remained as spectators.

To me the procession from the preparatory tent to the adoption lodge seemed the most solemn feature of the entire ceremony. During the subsequent dancing the performers and onlookers indulged, from time to time, in considerable jocularity. Occasionally a catlinite pipe was seen making the round among the musicians. The ceremony in the other adoption lodge terminated earlier than the Weasel initiation here described, possibly because of the smaller membership of the other chapter. The members of the latter entered the Weasel lodge and some even participated in the dancing.

At about four o'clock an old woman called out a song to the musicians. Then she and a middle-aged man knelt at the foot of the altar, each holding a rattle in one hand and a fan in the other. First they beat the ground with the rattles, at the same time shaking their fans. Later they lifted up the rattles and shook them in the air while maintaining the kneeling posture. Ralph Saco explained this series of movements as follows. The kneeling is in imitation of the people working in this posture in the Tobacco garden, striking the ground with the rattles refers to the Tobacco that has not yet sprouted, while raising the rattles symbolizes the growing of the Tobacco.

At about five o'clock an old woman, wearing a headband and holding a fan in one hand, stood up alone to dance to the drummers' final song. Towards the close the members present took little willow sprigs and shook them, finally raising them aloft with a sudden movement to make the Tobacco grow, while the musicians correspondingly raised their drumsticks. Thus the ceremony ended, being followed by a distribution of eatables.

THE SWEATLODGE RITUAL AND THE SELECTION OF MEDICINES.

The details of the sweatlodge ritual have already been set forth in Medicine-crow's and Plenty-hawk's accounts. It merely remains to add the personal reminiscences of other informants. The performance may either directly follow the public initiation or be undergone on the following morning.

When Young-crane entered the Otter chapter, she went into the sweatlodge the morning following the public ceremony. With her went her husband Crazy-head and his second wife, also several other Otter members, including Hunts-the-enemy, the son of the chapter's founder; altogether about eight people. The sweatlodge was of somewhat greater than ordinary size. It was covered with buffalo skins, and bags filled with Tobacco were laid on top. Those inside were undressed. The owner of the sweatlodge, Buffalo-carcass, sang first, another man having previously poured four cupfuls of water on the rocks. "We just lay and sweated for a time, then the door was raised. Anyone in the lodge would tell his dream, and all the rest wished it might come true." The other singers were Medicine-crow, Charges-strong, and Ictcxac, each singing after a lifting of the cover. The second time water was poured on five times; at the third pouring, seven times, at the fourth, ten times.[1] After the fourth song all the inmates sang; before that they had merely listened to the four singers. At the close of the performance the door-raiser spread a sort of carpet by the side of the sweatlodge and laid all the Tobacco bags on it that had been deposited on the top of the sweatlodge. These bags belonged to members of the society. Then all came out, took a bath, and went home.

The following morning the novices, i.e., Crazy-head and his two wives, were to receive medicines. Men and women assembled in a tent, in the rear of which the medicines had been placed. Hunts-the-enemy held the ownership of the adoption lodge; in acknowledgment of the horses and presents offered by the initiates he surrendered the prerogative to Crazy-head's other wife. Thereafter, if anyone required an adoption lodge, he would apply to both of Crazy-head's wives. Having paid for their initiation with the aid of their relatives, the two women were entitled to choose medicines for themselves. However, Young-crane felt that she knew nothing about the matter and accordingly had Wolf select for her. Thus she obtained an otterskin sold to the writer in 1910, a medicine blanket, a *baxōseimbāpe* (plant growing by the water, with cigar-like top), an otterskin belt, and some buckskin bags with Tobacco seed. She subsequently used the otterskin in the Tobacco dance, holding it by the neck while dancing. The Tobacco bags secured on this occasion were of the large variety.

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[1] This does not conform to the usual practice; see p. 141.

At this point may be offered a few words on the Tobacco seed containers. They belong to two quite different categories as to size,—small pouches directly enclosing the seed and the large bags borne on the back in the Tobacco processions. The little pouches are frequently tied together in pairs (Fig. 2) and generally remain undecorated except that those containing the last harvest's seeds are painted red on the outside. I bought one small pouch of aberrant type (50.1-3985), bottle-shaped and decorated all over with rather large beads of white, black, and red color.

The large bags, though varying in size, are all of the same order of magnitude and are all supplied with carrying straps. They differ in material, rawhide being used as well as tanned buckskin, elk and buffalo skin. Further, some are plain, others decorated with a fringe, appendages, or painted designs. A few characteristic specimens will be described. Fig. 11d (50.1-3870) shows an elk (?) rawhide bag decorated on both sides with a fringe terminating in dewclaws. The side exposed in the procession is ornamented with parallel vertical stripes in dark color alternating with rows of small circles. These designs were interpreted to represent the Tobacco garden, the circles being seeds, the bars the spaces between seed-rows. From the side nearer the carrier's body there projects a small triangular flap. Along its edge there is marked a triangle bisected by a perpendicular stripe, and each of the resulting compartments encloses two small circles. In Fig. 11b (50.1-3984) is shown a bag of buffalo calfskin dressed with the hair. It is fringed on the sides, and the surface visible during the procession is decorated with nine small discs in beadwork,—the four corner ones being white with a blue periphery, the remainder blue with a white periphery. Another specimen (Fig. 11c, 50.1-3905) is fringed at the sides and has for ornamentation four bands of beadwork, each composed of four rows of beads; these are of white, red, black, and pink color. In Fig. 11a (50.1-3945) is illustrated a relatively small bag with six rows of varicolored beads and a central shell; a slender stick sold with this specimen was said to be placed inside the bottom to keep it straight. Another specimen (50.1-7441) not illustrated here has a similar stick inserted into a sheath open at both ends that is sewed to the *top* of the bag. This piece is laterally fringed like some of the others but differs in presenting two new features. Suspended from the shoulder-strap there is a small perforated stone amulet, said to resemble the charms put round a horse's neck. Secondly, there is a decoration in triplicate on the side that would not be visible to spectators of the procession. The design, which is in red, consists of a stem with three pairs of branches terminating in small circles,—the whole doubtless representing the Tobacco plant. This bag was said to be very old, having been used two generations prior to Gray-bull's.

Child-in-the-mouth also entered the sudatory on the morning following adoption. Two men with Tobacco medicine sat on either side of him. They took some sagebrush and rubbed it over his body, from the head downward, which was called 'washing him off.' The sweating ritual otherwise seems to have conformed to type. After the close of ceremonies the sacks laid on the lodge were taken off by each owner, and all went home. They proceeded to a dance lodge and the members who had received horses given as Child-in-the-mouth's initiation fee presented him with Tobacco and bags for it.

According to Gray-bull, the four song instructors sweat with the novice, and the Owner of the adoption lodge puts up a second sweatlodge and joins the other members of the chapter.[1] He said that in the adoption of Jim Carpenter in 1911 the sweatlodge ritual took place on the evening of the day of the public initiation. The object of the ritual is to promote the novice's welfare. In the selection of medicines Gray-bull himself took some from the four song instructors, but otherwise Bell-rock and White-stripe-across-the-face chose for him. He got a black wolf, some red feathers, a whip, and two eagle tails. His wife also got medicines: from the wife of one of the song instructors she took a piece of shell tied to an elk-tooth dress. The woman who gave her this had shells for her *bātsirəpe;* shells had at one time entered her body and on certain occasions she was able to make them come out of her mouth.

Cuts-the-picketed-mule was taken to sweat on the morning after the public initiation. Four sweatlodges were erected, but she did not describe their uses. In the evening there was a great Tobacco dance and she was ordered to prepare plenty of food and gifts. The members of the Eagle chapter sat on one side, those of the Yellow Tobacco chapter on the other. My informant was requested to pick out what objects she wished. Beginning with the Yellow Tobacco chapter, she selected a yellow robe and dress, a yellow lizard, an otterskin headband, an eagle plume for the forehead, yellow bracelets, earrings with abalone shell, a yellow muffler and a Tobacco sack, for which alone she paid a horse. She took four packages of Tobacco. Starting on the Bird side, she chose a red dress and a breastpin with an elk tooth and abalone shell, two eagle wings, a big Tobacco bag, a breast ornament, and a bracelet of sacred beads and shells for which last-mentioned object she paid a colt. She paid individually for all these medicines, giving, e.g., a horse

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[1] It is not clear to me whether this means that the Owner joins the novice and his instructors, merely putting up a separate sudatory as a matter of form; or, as seems more likely, sweats in the special sudatory with some of the rest of the chapter.

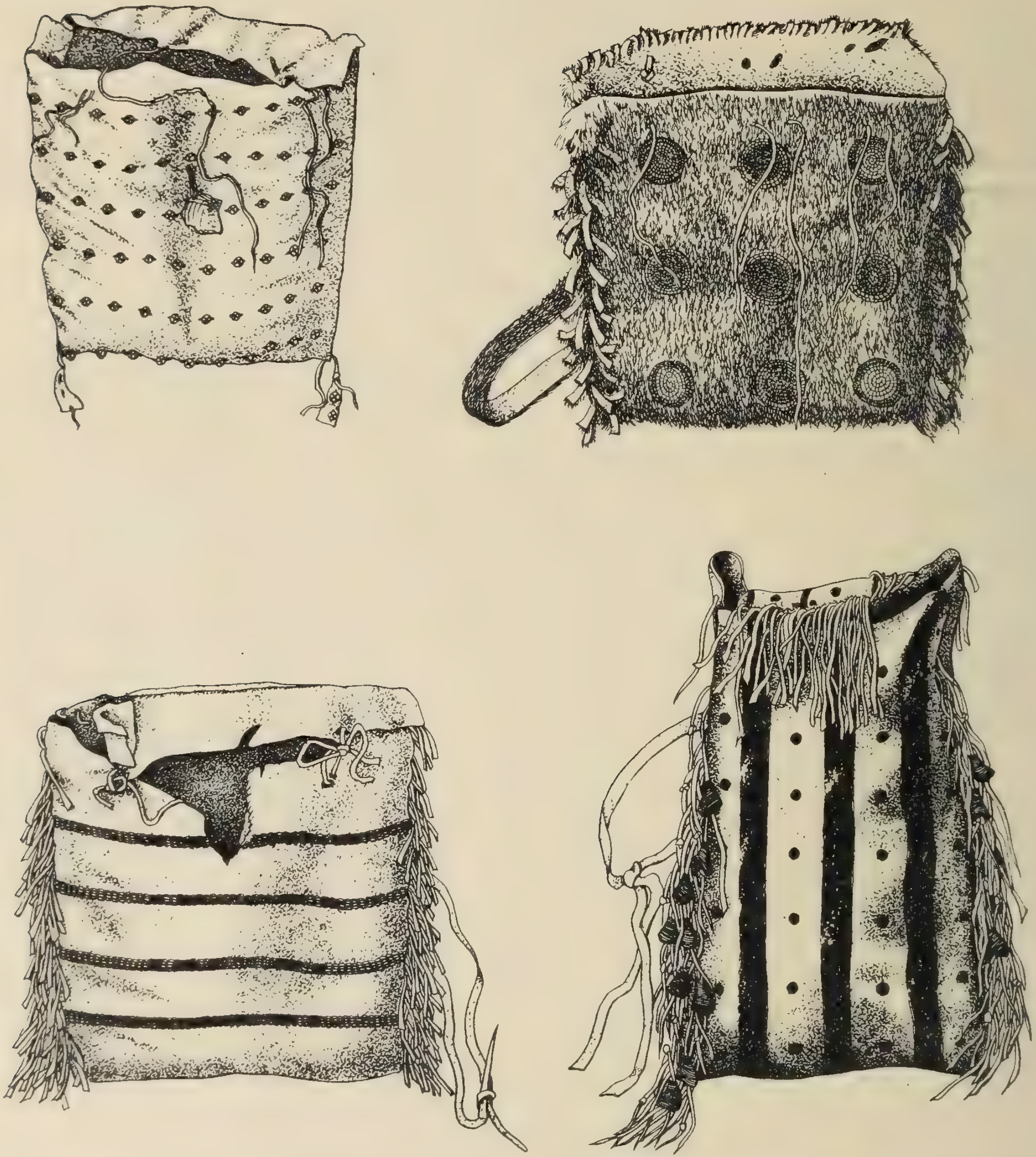

Fig. 11 *a* (50.1-3905), *b* (50.1-3984), *c* (50.1-3906), *d* (50.1-3870). Large Tobacco Bags.

for the Tobacco bag and another, as well as otterskins, etc., for the breast ornament. For a horse she bought the privilege of sitting next to the door, which involved always getting the food left undistributed; when there was plenty of eatables, there would be a good deal of this. When any song was sung, she had the privilege of taking it up when nearly ended and carrying it on alone for several measures.

When Old-dog was adopted into the Strawberry chapter by Bear-wolf, he and his relatives paid fifty horses, of which Bear-wolf gave one to each of the four song instructors, whom he had selected. The medicines received were paid for each with one horse; Bear-wolf distributed the horses among different members of the chapter, and in return Old-dog received medicines from them. He took Tobacco, weasel skins, and artificial strawberries prepared by Medicine-crow; the Tobacco was in bags and ready to be planted. From Bear-wolf himself my informant obtained little brass bells fastened together and trimmed with little feathers. The bells represent the stars.

THE PLANTING.

While I was never fortunate enough to be on the Reservation at the time of a Tobacco planting, I secured a number of independent descriptions by trustworthy natives. Briefer accounts have been published by Simms and Curtis.[1] In the interests of clearness I will subdivide my account into sections dealing with the principal activities of the Mixers, the Procession to the Site, Performances at the Garden, Inspection and Harvest.

THE MIXERS.

According to Pretty-tail, if any member (presumably meaning any Mixer) has had a dream during the winter concerning the Tobacco planting, he prepares a feast in the beginning of spring and invites all the Mixers, men and women, for a discussion of the subject. After they have eaten, the host inquires of each guest whether he or she has dreamt about the Tobacco planting. Then any one who has done so tells about it. Some will say that they saw the Tobacco growing to such or such a height, that they saw the leaves but not the site of the garden. Others have seen the Tobacco just coming out of the ground or have seen the crop maturing, or have merely caught a glimpse of the enclosure and of the ploughed ground. Still others have seen the ground ready for ploughing and know the very spot. After each one has replied, the host tells of his own dream. At times four or five men have seen the identical site, which is then chosen for the place of the ceremony.

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[1] Simms, 330-335; Curtis, vol. 4, 61-67.

Lone-tree says that at this gathering any member of the society may attend and that a dance is held. If no one present has dreamt of a definite site, the Mixers determine the locality. This happened at Lodge-Grass in 1911 (Old-dog).

In 1914 Muskrat said she had dreamt of a site nearby, but the people wanted to plant on the Little Bighorn near One-star's encampment. A messenger was dispatched to her in order to gain her consent through a promise of money and food, but she refused. At last they offered her a pipe and after smoking it she agreed to be the leader. Thus she reluctantly yielded. They wanted her to ride on a horse but though she was crippled and used crutches she walked over to the preferred site. She looked it over but did not like it. Accordingly, while planting there to accommodate the other people, she did most of her personal Tobacco planting nearby to satisfy herself.

Between the time of this gathering and the planting ceremony the members gather all fresh bones, pound them up and get together as much lard as possible. The Mixers generally supply meat for hash, to be paid later to non-members who assist in the construction of the garden enclosure and similar tasks.

The proper season for the mixing is in May, "when the chokecherries are ready" (blossoming). Later in the spring the man who invited the Mixers for a discussion of their dreams announces, "I am going to move near the site." He moves and the other people follow, the whole tribe camping near the site. The Mixers prepare pemmican and on the same day all of them mix Tobacco seed, each in a separate tipi. The most circumstantial account was given by Pretty-tail. As stated elsewhere the details of the mixing vary slightly. In former times they gathered elk, deer, or buffalo dung to mix with the Tobacco, also different kinds of flowers, roots, and wild onions, according to their dreams Now cow dung and eight different roots and flowers are used. The Tobacco seeds are mixed in a wooden bowl with a red ring painted on the inside. Formerly a dipper of buffalo horn was used, at present one of cow horn is substituted. Pretty-tail shakes his rattle and begins to sing while his wife, Strikes-in-the-house, sits by him. At the close of each song she makes a motion above a bucket of water as if about to dip in her ladle until after the fourth song she actually dips the horn into the vessel and pours water into the bowl up to the red ring, when she lays down her spoon. There are several miniature bags with Tobacco seeds which she opens. Her husband sings four songs. At the fourth she empties the entire contents of one bag into the bowl, next she adds other ingredients of the mixture, and when these are well soaked the cow dung is put in. By this time peeled cow paunches representing buffalo manifolds of old days have been prepared and the contents of the bowl are emptied into one paunch. A big pipe with cloth over the mouthpiece is taken and the smoke from it is blown into the paunch, which in order to retain the smoke is quickly tied with sinew looped at one end. A stick of cherry wood, hooked at one end and sharpened at the other, is painted red, then the filled paunch is tied to the hooked part. Other paunches are treated in the same way. Then they go to a big tipi, and the sharp ends of the sticks are driven into the ground.[1] A rope is stretched between two poles of the lodge and to this rope they tie the cherry sticks. These labors consume the entire day. In the evening they begin to dance in the Mixer's lodge and continue all night, then they go home.

In this way each member in every chapter turns over his Tobacco seeds to the Mixer, who receives a fee for mixing them. Lone-tree said that generally there was only one Mixer couple in a chapter. In 1911 the Strawberries and Ducks had a joint mixing ceremony.

Everything considered, the Mixers are probably the most important officers of the society, which derives its name *bacúsuə*, from the soaking of the Tobacco seed.[2]

THE PROCESSION.

On the following day the members, sometimes accompanied by the entire camp, set out towards the garden site. Before starting the members of each chapter assemble in a separate lodge, where they are painted by the Mixer. They are dressed in their best clothes, sometimes wearing medicine blankets. The women carry blankets in their arms and large Tobacco bags on their backs. As soon as these are secured, everyone rises in the preparatory lodge, and the musicians intone a certain song. By this time a woman known as the *akbasā́ande* (=the one who goes first), who carries a medicine, has taken up a position far in advance, the distance between her and the remainder of the society being estimated at from fifty to three hundred yards. It is her chapter that takes precedence in the formation of the procession. The native term designating her office would be most naturally translated 'leader' but in order to distinguish her from the woman who actually leads the chapter out of the preparatory lodge I will call her the Medicine-bearer. Many regard this as the greatest office in the society. As in the case of the Mixer privilege, it seems to be actually held by a married couple, but the wife generally takes the lead in the march and carries the sacred object. Naturally each district of the Reservation requires a distinct Medicine-bearer, and in regard to the sacred objects carried some differentiation has developed. The ancient leading medicine was an otterskin, which was associated with certain other sacred emblems.[1] Thus, at Pryor the husband of the otter-bearer showed me the elkskin headband with feathers in the back which he wears in the procession and the eagle feather fan he carries on this occasion. Among the Lodge Grass Indians One-blue-bead distinguished three officers connected with the otter medicine,—the otter-bearer, an old man of the Otter chapter wearing a crown of white feathers, and another old man carrying a Tobacco sack with meadowlarks and having his head likewise decorated with these birds; these three medicines, otter, crown, and meadowlarks, were regarded by my informant as forming a single medicine.

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[1] It is not certain that this occurs in the tipi.

[2] *icuik·*, he washes, is a related stem.

Medicine-crow thus accounted for the substitution of a crane for the otter medicine among the Lodge Grass people One of his particular friends had been killed by the Dakota and Medicine-crow went round the prairie mourning and fasting near the camp in quest of a vision. On the third day he was very thirsty, lay down on his stomach and fell asleep. His father had had a vision of a crane, and Medicine-crow then also saw a crane. "It walked up to me, wearing about its neck a scalp with blood trickling from it. I looked round and saw the cherries were ripe. I woke up and began to think I should kill a Dakota when the cherries should be ripe. I went out and killed a Dakota at the time indicated in my sleep." The crane, according to this informant, is supposed to be the cleverest of animals. There are only two men at Lodge Grass (1910) who had it for their medicine. Medicine-crow bought crane power from another man so as to make his own still greater and it has been used in recent times to take the lead. Gray-bull said the crane had superseded the otter in Lodge Grass about 1895 Before that the otter had been used by the Crow as far back as he could remember. Medicine-crow's wife had acted as crane-bearer until Bright-wing's wife bought the privilege from her for two horses.

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[1] Curtis (IV, 66) says the skin is that of either an otter or beaver because both were water animals with power to bring rain on the crop.

Shot-in-the-hand (1911) said that in the Bighorn district the otter had been formerly carried by the Medicine-bearer, but that in recent times after the death of a certain woman owning this medicine another person had been chosen to carry a pipe instead. He added that a male Mixer who had dreamt of the site had twice been Medicine-bearer in his district.

After the musicians in the preparatory lodge of the Medicine-bearer's chapter have sung the fourth song the Leader, who according to Pretty-tail is the Owner of an adoption lodge, must walk round the inside of the lodge before conducting the chapter outdoors. First come the other women, all of whom form a line standing abreast of one another, next come the men of this chapter with their drums and stand to the right of the women, the women of the next chapter take positions to the right of the Medicine-bearer's men, and so on, until all the members of the society have formed a *horizontal* line. Another statement makes all the women stand together, though segregated by chapters, and all the men, similarly subdivided, to the right of them.

I will follow Pretty-tail's account. The procession starts. They walk a short distance towards the site of the garden, then they halt. Everyone sits down, the women laying their medicine bags before them, and the men sitting behind the women in a long row Pretty-tail, the Medicine-bearer's husband, takes a pipe, fills it with tobacco and offers it to each man in turn, but everyone declines to take it.[1] This occupies about half an hour. At last one man accepts the pipe, smokes it, and passes it to the rest. The women put on their bags and the men pick up their drums. The smoker and his wife stand up in front of the women, facing the Leader. Pretty-tail approaches the Leader and informs her that the smoker has smoked and is ready to sing. The man sings his song in a low voice to teach it to the musicians, who then sing it aloud and beat their drums, while the women dance. After four songs the procession resumes its march. After a while the Medicine-bearer halts and a similar procedure is followed. This is repeated at a third stop. At the fourth station they are about a hundred (others say three hundred) yards from the site, while Strikes-in-the-house, the Medicine-bearer, is within fifty feet of the ground. She must never look backwards but calls to a member adopted by her to remove the medicine from her back. All the other members get some fast runner to take their medicines. After the singing of four songs these runners begin to race to the site. When they arrive, they deposit the bags on a blanket and cover them with another blanket. Whoever gets to the ground first will enjoy good luck that season; in the old times it was believed that he was fairly certain of striking the first coup of the season.

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[1] Simms (332) explains that to smoke is equivalent to the sacrifice of the smoker's life so that the Tobacco may grow and that some great misfortune would befall him if the crop failed.

Other informants furnished supplementary data. It is clear that no one is permitted to walk in front of the Medicine-bearer. One-blue-bead says there are watchers to see that this rule is not broken and Gray-bull has a military society following the procession on horseback with long sticks or dead snakes tied to sticks and preventing non-members from approaching the society. At the first stop One-blue-beads represents the Bearer placing the otter between the forks of a stick, which is planted into the ground about forty yards ahead of the Bearer's own position, to which he (she?) must walk backwards. The same performance is repeated at subsequent stops. The winner of the race will have a good crop of Tobacco, that is why all try hard to get to the garden first.

According to Gray-bull the Medicine-bearer after planting the stick with her otter into the ground at the first halting-place sings a song, which the musicians take up, while all the other members dance. The Bearer also dances in her place. At the second stop she takes a pipe to all the Mixers, one of whom smokes and then gives the pipe to the other members of his chapter. When they have finished it the Medicine-bearer comes to take it back, and the Mixer tells her his dreams,—what he has seen of the next season or that he has beheld plenty of Tobacco. This Mixer sings four songs there. At the third stop the Medicine-bearer again brings a pipe but hands it to another Mixer. A similar ceremony ensues. At the fourth stop the Bearer gives the pipe to still another Mixer. She usually encounters difficulty in trying to make one smoke, for they are afraid to sing to the ground where they are to plant. Just before the last Mixer's fourth song the members of all the chapters give their bags to swift young runners. Now the police no longer restrain the spectators. The Medicine-bearer paints a horse red on the sides of his body and lets some prominent man ride. At the close of the fourth song the horseman and the young racers run to the site. The one who gets there first says, "*hā́ he*!", as though he were striking an enemy. The Mixers had put up their sticks previously on the site and instructed their runners which ones to run to. Sometimes a foot-racer would take the stick out of the ground, saying, "I have taken a gun from the enemy."

There is a certain inconsistency in the accounts as to the identity of the person making the Mixers smoke. This is rather apparent than real, however, for throughout the Tobacco ceremony the unity of a married couple seems to be strongly insisted upon. Thus, it would make little difference whether the Medicine-bearer herself or her husband performed certain ritualistic actions.

AT THE GARDEN.

After the race the rest of the society came up to the site, where the Mixers spread a blanket on one side of the garden and put all the medicines on it. Then anciently members as well as outsiders got axes, hoes, and other implements to remove all the grass from the ground, making it bare and smooth. Some men and women went off to fetch dry grass and small dry twigs, which were spread over the site. Next a man having the eagle for his medicine (even though he might not be a member) was chosen to sing to the ground. He sang four songs, at the close of which the people set fire to the dry grass. The singer held two feather fans in his hands and fanned the fire. When the grass had been consumed, the people took leafy branches and brushed the site with them. The Mixers gave pemmican to all who had helped. Nowadays the ground is not burnt over but merely undergoes a preparatory ploughing.

Outside the site the people begin to cook and have a feast, after which a rake is used to remove the sods, which are laid at the edge of the ploughed surface as a kind of enclosure. Two sticks are planted on opposite sides of the garden, and a rope is stretched across to join them, marking the space to be allotted to each person. Every Mixer counts the number of members under his supervision and counts a corresponding number of rows. A stick is planted in the ground for his group's property mark. In this way all the land is divided up. According to Arm-round-the-neck, husband and wife get distinct allotments of space but Gray-bull says each couple had but a single row for their seed, but on another occasion said he and his wife had had three rows altogether.

According to-Old dog there are no fixed relative positions for the several chapters, but if some dream of planting in a certain corner they think they will have better results with their crop by utilizing the spot dreamt.

As to the planting there is some discrepancy between Gray-bull's and Pretty-tail's narratives. After the division of the ground Gray-bull has each Mixer select a renowned warrior, who is made to stand before him on the garden site. The Mixer holds this man by the back and sings four songs, pushing him a little at the close of each. The fourth time the warrior runs across the site in a line parallel to the short sides of the oblong and returns to the Mixer. In a low voice he reports that he had gone out on a war party, struck a coup against the enemy and on his return trip got to the garden site; that he saw plenty of Tobacco and berries, and buffalo near by. The Mixer tells this aloud and every one then utters the wish that the people may eat cherries, have plenty of Tobacco, etc. Some of the young men would wish for coups. The Mixer then takes a sharp stick, holds its point towards the ground, sings four songs, and at the close of each feigns punching a hole until at the fourth song he actually makes a hole two inches deep. Then the seed is put into the holes by the members. When one chapter is done planting, the men all sing songs, one after another, and the musicians take them up. Then all the male and female members dance on the site, standing on one side and facing the garden. After this dance they eat.

Pretty-tail does not assign the same part to the Mixers and is more explicit as to the actual planting. After the assignment of space within the garden the women stand just inside the site facing away from it, with digging-sticks in one hand and the Tobacco seed in the other. The men sit facing the women. The women dance, pointing their sticks at the ground. After the singing of four songs each woman punches a hole in the ground, then each walks backward along the space allotted to her. The husbands follow in their wake, walking forward and dropping the seeds into the holes. When their labors are done, the women line up across the far end of the garden. The women retrace their steps to the rear end. Each Mixer is seated opposite his own plot and group of members, and sings four songs, to which the women dance. Then the ordinary members go home, while the Mixers and their wives remain to make more medicine. They sing and shake rattles, finally they too go home. On the same night they must have a dance.

There is a further difference as to the events after the planting ceremonial. Pretty-tail leaps at once to the erection of an adoption lodge on the morning following the happenings described in the preceding paragraph, while Gray-bull describes a sweatlodge ritual following immediately the plantation dance and feast. Four sweatlodges are constructed, according to him, by the Mixers who sang at the four stops of the procession. The medicines are laid on the sweatlodges and only members of the society enter, all those of one chapter going in together. In the sudatory it was not the Mixer who had sung at the halting places but some other members that sang at each opening of the lodge and dreams were told in the fashion typical of the sudatory ritual.

After this, according to Gray-bull, the female members used to chop long cottonwood trees, while the young men dressed in finery, mounted horses, rode double with the girls and dragged the trees with ropes to the site of the lodge. First three or four poles were tied together with willows and set up, then the other poles were put into place. Two tipi covers were used for this lodge. The military societies painted and dressed up and danced in this lodge, then they received food from the women of the Tobacco organization. On the following day the members all entered the lodge and the Owner stood up with a brave warrior before him, on some juniper twigs, holding him by the back and singing. After the fourth song the Owner pushed the warrior, who held a bucket and ran to the river with it as fast as possible, dipped up water, and returned. When he got back to the lodge, the Owner's wife put a big piece of pemmican into his mouth, which he ate, whereupon he uttered a wish and reported to the Owner in the fashion noted above, i.e., he told of going on a war party, killing and striking an enemy, and seeing a plentiful crop of Tobacco and cherries on his return, with buffalo near by. Since he ran fast, there was usually not much water left in the bucket, and that was given to the old people to drink. Then the people sang and danced. In the middle of the big lodge a fire was built and tongues were boiled by the Owner's wife. Warriors of distinction would stick into the lodge long poles with scalps or a wolf tail at the end. The women would first see who did this, then take out a tongue with a stick decorated at the handle with a scalp, and hand it to the brave, who would take it out and give it to his sweetheart. Sometimes young boys would come to steal it from him or his girl and run off with their prey.

Pretty-tail describes the lodge as quite similar to the one now put up at an adoption, with a central oblong cleared of grass and spread with juniper leaves made into an altar. The Tobacco bundles are put down in a row on the west side of the altar, while the weasel, otter and other skins are laid along the long sides of the altar. The faces of the members are painted according to dream revelations. They dance until evening. Finally a certain song is intoned to which no one dances, but all rise, put the Tobacco bags on their backs and take other medicines into their arms. At the fourth song they all run home.

To revert to Gray-bull's account. On the day after the adoption lodge ceremonial the people moved a short distance and the Mixers again built sweatlodges for the members. This was repeated with short journeys every day until the fourth time. In the old days people were adopted at this season, when the adoption lodge was erected after the planting, but now they adopt at any time.

A matter of some importance omitted in the preceding reports but repeatedly referred to by natives is the lying at the garden after the planting in order to get a vision. Tobacco songs, more particularly, originate in this fashion. The following is Gray-bull's experience:—

> I once lay at the garden for three days and nights. I slept. In the morning I got into water up to my breasts, faced upstream and downstream and stayed all day until sunset. My body felt as though pricked. All my body was wrinkled up when I got out. I got out quickly and lay down in the shade. All my body felt as if pricked with needles. I lay down again by the garden and saw a man singing this song and going through different movements, and I now (1911) dance with it.

bī ṓpək.	baxū́a	kʻōtá	ṓpək.
I am Tobacco.	My body	all over	is Tobacco.

> At the first sentence the singer gently moved his hand forward, which was clenched, but not tightly, at the second sentence he touched his body. After I got home I found my Tobacco growing very well and thought the song had something to do with it. The people asked whether I had seen anything and I told them of my vision. Then all said, "Thanks! We shall surely have a good crop."

Muskrat said that in 1914 a vision was sought at the garden by Flat-dog and the wife of Not-mixed because they were in mourning. They fasted while the rest were going through the ceremony and entered the garden when the others had gone away. Flat-dog had a vision to the effect that he was going to have a fine Tobacco crop. My interpreter explained, as is obvious from other accounts, that mourning is not a necessary condition for seeking a revelation at the garden.[1]

Though never present at a planting ceremony I repeatedly inspected and photographed Tobacco gardens and append the following description of the one seen at Lodge Grass on June 25, 1910, with explanatory comments subsequently secured. All those seen later and elsewhere (Fig. 12) conformed rather closely to this type.

It was situated at the foot of a hill and consisted of two enclosures, the smaller one (which was less extensive even than the area allotted to a single chapter in the larger garden) serving for the planting of seeds left over after the main garden had been planted. This main garden was an oblong about six yards in width and approximately sixty yards in length. It was divided into half a dozen small plots belonging to the several chapters. The boundary lines of adjoining plots were in one or two cases indicated by parallel rows of little willow wickets extending across the width of the garden, and separated by an empty space about two feet wide. In one place there was but a single row of wickets. In another case a cherry stick protruding four feet above the ground had been planted in the center of the very narrow area separating two plots; from the cherry stick there were suspended rags of cloth. The fence enclosing the whole garden was very crude, branches and tree trunks being thrown together with great irregularity.

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[1] Curtis (IV, 67) says the fasters were young men who had had no success in warfare, but the motives were obviously more varied than his account would indicate.

Each plot within the garden was again subdivided, each couple belonging to a chapter being entitled to plant seeds in two rows. These rows were in a number of instances marked by little stones extending across the width of the field. Each couple also had one cherry-wood digging-stick (Figs. 1, 12), which was set in the ground near the beginning or end of the appropriate row and served as a property mark, each stick differing from all others in some respect. Thus, of those seen, one was longer than the rest, another had a crooked handle at the top, still another had a little willow branch tied round it near the top. While nearly all the sticks were painted red, one was not painted at all and had all its bark peeled off. The peeling of the bark was distinctive of several specimens noted: one had the bark left at the top, another had it extending halfway down. Several sticks had tied to them canvas seed-bags; to others there were attached wreaths of sluegrass or juniper leaves, such as women wear during the Tobacco ceremony. Gray-bull derived the use of these from personal visions. He thought they helped

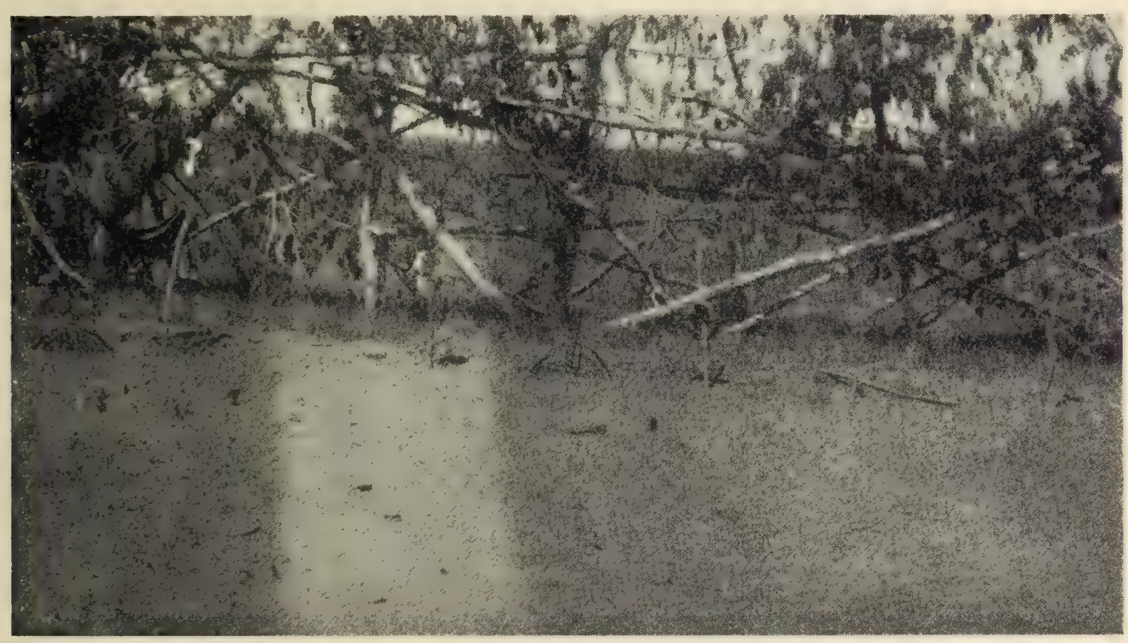

Fig. 12. Tobacco Garden with Cherry Sticks and Two Miniature Sweatlodges; Behind them Part of the Enclosure is seen.

the growth of the Tobacco in addition to serving as property marks. The ways of separating plots were also due to specific visions in his opinion. Most of the cherry sticks were planted on the east side of the oblong, though in some cases they were set on both sides.

In the plot of the fourth chapter, outside the line of the cherry sticks and quite close to the enclosure, there was a miniature sweatlodge frame formed of two willow arches crossed by five others at right angles. Its diameter was from eighteen to twenty-one inches; its height about eight or nine inches. Remnants of a fire were visible and my interpreter informed me that pine leaves had been smudged there. A second miniature lodge was found on the opposite side. (Figs. 12, 13).

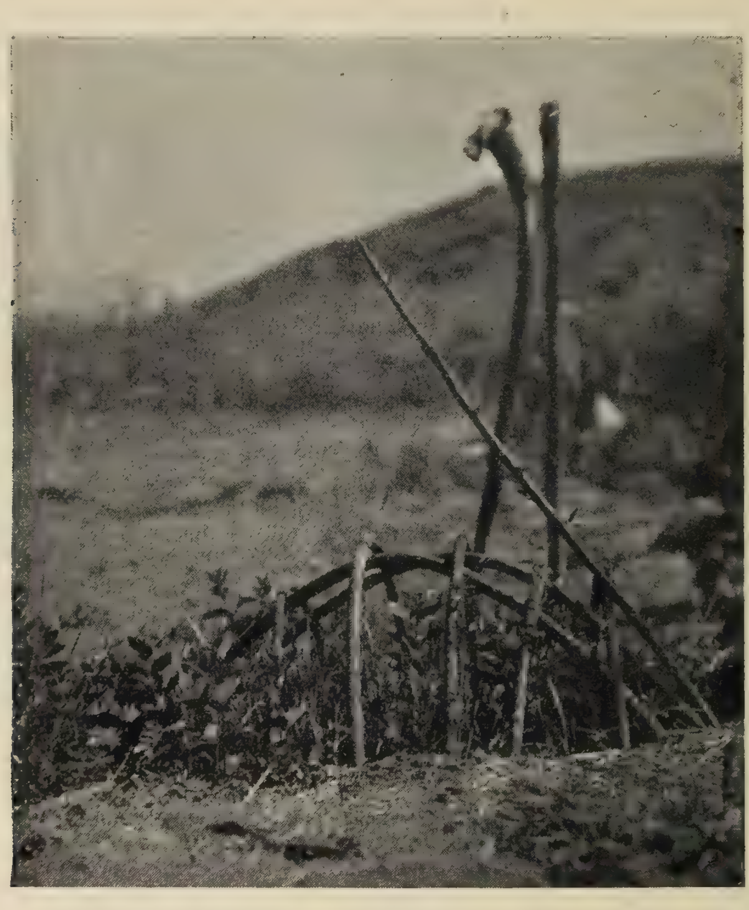

Fig. 13. Miniature Sweatlodge in Tobacco Garden.

A short distance from the garden there was a large sweatlodge of the ordinary type.

With regard to the little sudatories in the garden Plenty-hawk said they were put up for lack of time to put up large ones. The small ones, he added, are more powerful than the big ones and represent a prayer for a good Tobacco crop. Medicine-crow said that these miniature sweatlodges are made as sweatlodges for the Tobacco; *isé* incense is burned there. Each chapter is supposed to erect one of the miniature sudatories. This was confirmed by Old-dog, who said the small sweat-lodges were made as a sweatbath for the Tobacco to make it grow. This informant explained differences I had noted in the several small sudatories as due to different visions; in this manner one might have two arches crossing five, another merely one crossing another, etc.

Simms's account of the events following the planting is more specific as to the ritual of the miniature sudatory:—

> When the planting has been finished a large sweat-lodge of bent boughs is erected, sufficiently large to accommodate ten or twelve men. This number enter the lodge and repeat, four times, the following song:
>
> " Say, man, we are going to make a sweat-house."
>
> The men remain in the lodge for about twenty minutes, when they rush to the river and take a plunge. After thus cleansing themselves they take a number of small willow branches and cover them with grease and charcoal; their ends are then stuck in the earth, in a corner of the planting ground, in such manner as to form the framework of a miniature sweat-lodge, in the center of which are put live coals of fire. From the mountains has previously been obtained a root called " bear-root," which is chipped and placed upon the fire; but before this is done the root is held by the ' father ' in his right hand, which he extends successively toward the east, the south, the west, and the north, facing the east all the time, so that when the hand is extended to the west it is necessarily passed over and back of his head, and when extended to the north it is also over the head. From this last position the ' father ' lowers the root with a spiral movement (as a crane alights) toward the fire. This is done four times, each time the hand coming nearer the fire, until, on its fourth descent, the chipped root is placed upon the fire.
>
> As the incense arises sunward a pipe is filled and lighted by the ' father,' who sends the first whiff toward the sun, at the same time pointing the stem thereto and praying that the people may live long. The next whiff is blown toward the east, the ' father ' at the same time pointing the stem of the pipe downward and praying that the people may have no sickness. If the smoke from the burning bear-root rises straight, prayerful petitions are made that the tobacco plant may grow as straight as the smoke, and that the participants and the whole tribe may have no misfortune.[1]

INSPECTION AND HARVEST.

During the period between the planting and the harvesting a number of rules are observed. The men belonging to the society when smoking make a motion outward and upward with their pipes, discontinuing the practice after the harvest. Further, no grass is burned by members. The man who fanned the fire does not permit anyone to move firewood in his lodge and the other members of his chapter observe the same regulation until the Tobacco is harvested. Bull-chief said that after the planting the members do not eat the soft bones (marrow?) of beef lest there be tooth prints on the harvested Tobacco. Likewise they abstained from wild celery and bull's testes lest the Tobacco berries be yellow and spoiled. After the plants have come out there must be no shinny playing or the Tobacco will break down. On the other hand it is lucky, according to Gray-bull, to be the first to eat young deer meat after the planting since the first member to do so will have a big crop. Ralph Saco, of the Bighorn District, mentioned a taboo somewhat different from those previously mentioned. During the period defined the members should not sing Weasel, Otter, or any other Tobacco songs except such as refer to the Tobacco itself; otherwise they will have a poor crop. The members dance rather frequently at this time in order to make the plant grow faster.

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[1] Simms, 334–335.

After the planting comes the inspection. There is some discrepancy in the several accounts but practically all agree that there are properly four visits to the garden for the purpose of investigating how the Tobacco is getting along. I will follow one of Gray-bull's narratives.

Four days after the planting the husband of the Medicine-bearer returns to look at the garden; sometimes he is accompanied by his wife, regularly by a chief or famous warrior, who looks at the Tobacco first. On this point Arm-round-the-neck said that the inspectors took with them scouts who had seen the enemy and dispatched these towards the garden when the party had got close to it. The scouts went, looked and returned to their companions, hallooing as on a war party. They tell the rest that the Tobacco is coming up well. On returning to camp, Gray-bull continues, the inspector reports to the Mixers accordingly, and they sing songs of rejoicing. Several days later the man who sang at the second halting-place in the procession to the garden goes to inspect and tells the Mixers on his return what he has seen. They again sing songs of joy. A third man goes about twelve or fourteen days later and generally finds the plants about two inches high. He goes back and tells the Mixers that the Tobacco is coming up very well, and they sing songs of joy. A fourth man goes from twenty to forty days after his predecessor and reports to the Mixers that the Tobacco is growing well. After the return of each inspector there is a Tobacco dance.

From other accounts it would appear that the Mixers went to inspect each time. Crane-bear says he went to the garden seventeen days after the planting and returned to inspect it with a uniform interval of seventeen days between successive visits. More frequently the periods are given as four days (between the planting and the first inspection), seven, ten, and fourteen days, which intervals also agree with those of Gray-bull's origin tradition.[1]

Bear-gets-up says that at the fourth inspection a Mixer goes toward the garden with all the members. They have dinner first, then the Mixer goes to the garden and builds a fire in it, on which he smokes *isé* incense. Then the people come and pull up the weeds growing on the plot. Somewhat later in the season a Mixer again inspects the ground, looking for weeds, and notifies the members, who come to remove them.

On August 25, 1913, when approaching Grasshopper's house, my interpreter and I caught sight of a group of people in the distance, in the little garden near Bad-man's house. We drove up and discovered Old-woman and Bad-man in the garden, with In-the-hole and Flat-head-woman standing just outside. I was told they were going to harvest on the following day, but the ceremony was postponed for some reason. I noted that Old-woman always pointed at the Tobacco not with her fingers but with a stick. This is one of the taboos; neither the Tobacco nor the stars, which the Tobacco represents, must be pointed at with the hands.

Nowadays practically all members have the right to 'take back,' i.e., to harvest their Tobacco. Formerly this was a privilege to be purchased from the Mixer, who received four presents in return. Members lacking the right would have their adopters get their Tobacco for them. Gray-bull himself had given away, i.e., sold the right.

The season for the harvest is "when the cherries are ripe." Theoretically all the chapters take back Tobacco on the same day (Gray-bull, Lone-tree), but on July 12th, 1910 when I attended the first harvest of the year the Ducks alone were in the garden to the number of about half a dozen. They removed the seed case not with their thumb nails but with a small piece of wood.

The harvesters rub *isé* root on their hands and feet before plucking the Tobacco. Generally the Mixer, accompanied by several members of his chapter, gets the new Tobacco and brings it back to camp, where they dance in the adoption lodge as at the time directly after the planting (see below). Arm-round-the-neck says they sing at the plot and then pick the Tobacco. After returning to camp with it they dance separately by chapters. The Mixer has tied up in separate bags the

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[1] Curtis (IV, 67) sets the visits at four, seven, nine, and ten days after the initiation.

Tobacco of members who have not gone to the garden, hands it to them and receives presents in return. Non-members sometimes give a horse to the Mixers at this time in order to get a necklace of Tobacco or some other medicine.

Another informant said that when gathering Tobacco the members take the very best food to the garden and give it to other people. After picking the Tobacco they take it to an adoption lodge on the following day and dance with it there. Then they clean their hands by rubbing them on the ground, for otherwise if they touched their faces with their hands sores would break out on them.[1] At the close of the dance there is a special song, after which the dancers run home; the one who gets home first will enjoy good luck.

If some of the Tobacco is not yet full-sized or mature at the first gathering, subsequent visits to the garden are made. After the *last* crop of the season an adoption lodge is erected and the members dance with the newly plucked Tobacco. Then the Tobacco stems and leaves are plucked out, cut up fine, mixed with meat and ordinary tobacco, and thrown into a creek. Gray-bull did not know why this was done but suggested that since the Tobacco was mixed with water before the planting it was natural to throw it into the water again after the harvest.

Crane-bear speaks of four harvesting visits to the garden with a dance after each one. After the fourth time the stems are thrown into the water. If the Tobacco did not grow they believed they should die.

ORIGIN TRADITIONS.

Accounts of the evolution of the chapters have been given above. Traditions relating to the origin of the society itself have been deferred until now because several of them presuppose a knowledge of the ceremonial. It is eminently characteristic of Crow culture that there should be no one standard myth but a variety of in part discordant versions. In some measure, to be sure, the difference is one of the interest on the part of the myth-maker rather than an actual clash as to statements of fact. Thus, some of the variants purport to explain merely how the Tobacco came into the possession of the Crow, others describe at length the institution of the society and certain ritualistic features as ordained through supernatural communications. The latter, while rather tediou reading, furnish valuable confirmation for some of the preceding accounts of the Tobacco ceremony.

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[1] Crane-bear speaks of itching and pimples.

Two notions which find expression in these traditions represent the general Crow point of view. The Tobacco is universally identified with the stars; and it is regarded as the distinctive medicine of the Crow, being equivalent to the Medicine Pipe of the Hidatsa.[1]

I will begin with the free translation of a brief text recorded in 1907 in the Reno District.

The ancient Crow and Hidatsa lived together. Our chiefs were named Tattooed-face and New-moon-face. A buffalo bull once came swimming across the Missouri. When he got to the near side, they killed him. They butchered him, but did not give any of the manifolds to New-moon-face's followers. They were offended and went away till they got to the mountains. The Hidatsa went in the opposite direction and took to raising corn and pumpkins.

A Crow (the chief?) said, "Way over there they (supernatural powers) have given me something (in a dream), thither I will go; they speak of winning horses." He got on a hill and saw the mountain he had seen in his vision. " They want me to stay at the foot," he said, " they are giving me something, I'll go." He went. On the mountainside he saw a star shining. He took it and carried it away with him. He wrapped it up and did not show it to anyone. After a while the green grass appeared on the ground. Where there was a cleared space he planted some of his find and kept some of it. Then it grew. He gathered it and gave some to four persons. "Thus shall we be people," he said, "do you plant it, and when it grows give it to four persons, taking pay for it. Then we shall not be poor." This custom still exists to the present day. This man who first owned the Tobacco lived to be very old, so that his skin became frayed with age before he died.[2] After him the people continued to raise it until this day.

Another version clearly differentiates the sacred objects regarded as characteristic of the Crow and the Hidatsa.

When everything had been arranged on the earth, the Crow began to travel over their territory with their pack dogs. A woman had two sons. The younger was adopted by the stars and blessed with the vision of the Tobacco, while the older had a vision of the Medicine Pipe. This happened in the country now occupied by the Hidatsa. A quarrel rose, the Crow separated from the Hidatsa. The younger brother said, " Let us go to the mountains, where my ' father ' has shown me how to plant these things." But the older brother replied, "*My* 'father' bade me stay here. I will try to live by the Medicine Pipe, the corn, and the pumpkin." Accordingly, the two brothers separated, each remaining with one of the two bands. Ever since then the Crow have kept their Tobacco. Later visionaries made additions to the ceremony in accordance with their revelations.

The following version, obtained from Crane-bear, a resident of Pryor District, does not refer to the traditional separation of the Crow and Hidatsa, but is equally clear in identifying the Tobacco with a star.

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[1] Incidentally, the Hidatsa do not regard the Pipe as one of their peculiar and ancient medicines.
[2] This is a stereotyped expression to denote the great age attained by men blessed with a revelation

At the time of the year when young birds become fledglings a little boy went out to hunt birds nearly every day. One day he shot off all his arrows and could not find any of them; he had only his bow left. As he sat resting in the shade, a young man came up to him and asked, " What are you doing? " Do you know me?" " I do not know you." " I am one of the stars above. I have two bodies, I'll give you one (*maxúa rū̆pem, hawátem barák'bīk'.*) Will you know it if I give you one?" " I don't know." " You will know. If I give you this, I don't want you to forget, and when you get to a certain age I want you to do as I tell you. I'll visit you four times while you grow up, and each time I'll speak to you about it. The fourth time you'll begin to perform." On his second visit the star said to him, " Get buffalo chips and elk chips, and the berries from a cactus plant and wild onions." The next time he asked, " Have you got all I told you about?" "Yes." " Get a beaver hide skinned so that it can be used for a sack; a rattle; and some ground-mole dirt (*bā̆sare*). I'll see you in the spring and that will be my last visit." In the spring while roaming round on the prairies the boy was visited again and was asked whether he had got everything as ordered. " Yes, I have everything in the hide of a spring calf." " Now it is spring, the grass is coming out, and I'll give you my second body. Camp in a place where you see a row of trees pointing toward the mountains. Sit there and take a stick four hands long, and make a little garden square of that size facing the mountains. I'll give you my second body now." He took from his neck four Tobacco plants and told him, "Put these four into the ground." He had some manure and burned incense of the *isɛ́* plant. " Take buffalo chips and mix them with Tobacco seeds. You'll be the leader of a war party and get horses and everything else you wish for. When you'll plant me, I'll be a young man every year." He sang a song and said, " Put mole dirt and some onion into the beaver sack, then the beaver will make you dream, show you what to do, and will give you a song." He sang one song, shaking his rattle. " Its first name is *ō̆pe*, later it shall be called *ì'tsi'tsìə*. It is *i'g'erɛ́əxe*, the morningstar." The plants have generally three crosses; *nū̆kaxpicə̀* (open line) is another name for the plant, referring to the crosses. " Come and visit me three times, and the fourth time, when the cherries shall be ripe, you may take me. These (the cactus, berry, onion, and beaver) are my servants. Each in turn will show you different things. At the time of the harvest I myself shall make you see the future and teach you some songs. Some time I'll make you dream of adopting others. When that time comes you may adopt and have ' children.' All of my stars own this second body of mine. When I grow, I'll be one stem for each plant. At the end of each stem will be four cherries." The man disappeared. When the time came, the visionary did not know what to do with the stem. He took it home. Beaver appeared to him in a dream and said, " I am his servant, throw the stem into the water. It needs the water." So next morning he threw the stems into the water. The next night Beaver again came and said, " Let us adopt children, look." Then the visionary saw two children, painted red. " Look further." Then he saw two others, with little beavers in their lap. Beaver said, " That is I," referring to the little beaver. Then the man went round the camp, found a very poor orphan boy, and offered to adopt him into the Tobacco ceremony. The boy consented. He took him into his tipi, sang the songs given to him, and thus adopted him. " You are my son now. My first payment shall be meat. When some of the men go hunting, accompany them and bring some meat to me. I am your parent now." The orphan went along on the next hunt, packed meat and put it before his parent. " This is the first pay I have received. Now I'll give you my necklace." The Founder took off his necklace, gave it to his adopted son, and bade him adopt someone else. So the orphan picked out a second orphan boy and treated him as he himself had been treated by his 'father.' He also asked his son to bring meat for the first initiation payment. The Founder made a necklace of one Tobacco plant, keeping the first necklace originally given to him. He made a second necklace for his 'son' and another for his son's adopted son. Then he said, "Adopt another." "No, I'll wait till I shall have returned from a war party with my 'son'." "What are you going out with?" "With this necklace you have given me and which I have dreamt about." Instead of killing the enemy, he brought back six head of horses. His father said: "Don't go on any more war parties until your 'son' has adopted a child."

Beaver gave to the last orphan adopted a dream in which he bade him adopt not a single person but a married couple. There were thus five members when this couple had been adopted. At that time initiation presents consisted of meat exclusively. The married man picked out an elderly man and his wife and adopted them. Then there were seven members. "Now," they said, "let us dance the Tobacco dance. Let us all get rattles." The two women had beaver skins made for them to be used for medicines. The necklaces used hitherto by the members were unpainted; now the Founder painted his necklace red. Each member had two rattles, which they beat against each other. They sang this song:—

iʻtsiʻtsέwa	dī́rirukʻ ,	awaxā́wɛsa	dī́rirukʻ.
All the Tobacco plants	are walking,	towards the mountain	they are walking.

They danced. The women danced. Beaver lay on the ground. The people looked on and thought the dance was fine; they wanted to be adopted and join. A certain man came up for this purpose, but the members told him he was too young, that they wanted to adopt only old people. Being refused admission he went crying on the prairies, then came back to the last couple initiated and asked them how they were adopted. They said they had given meat in order to be adopted. "I want you to adopt me." "Wait, I'll see my grandfather first and see what he says." The Founder said they had not enough seed left and bade the candidate wait until the next spring.

Every month they performed the Tobacco dance. The candidate always brought meat to them. When the time for planting came, they said, "Let us plant and when we get new seeds, then we can adopt him and make a necklace for him, too." This happened when the Founder was already an old man. The novice was adopted with his wife, making nine members in all. When the time for planting came, other people looked on and said they were glad to see it and liked it. The last couple were told to pay a bow and arrows, moccasins, and leggings, and a robe, also to kill a buffalo by way of initiation fee. The society danced every month at the time of the new moon. They went through the same harvest performance as in the previous year. The Founder told the members to get the pericardium of a buffalo and to use it as a tobacco sack, for the star had said that that was his own covering. The Tobacco gave the Founder a dream bidding him put him in a sack and tie a meadowlark to the outside of it. The outsiders wished to get initiated for they saw that poor people after being adopted were getting along well. This was especially true of the first novice, who secured horses and was a successful leader. The Founder said that was just what he wanted. The membership increased to sixteen, including wives of married men.

A certain man by the name of Blanket-owner was refused admission to the society. He went about crying on the Rosebud. One day, when driving horses to water in the springtime, he saw some prairie-chickens dancing and watched their movements. One of the birds on the outskirts said: " All of you, come hither, now let us have a Tobacco dance." The headman said, " Go and fetch my drum." Another chicken went to the brush and when he came out he was transformed into a person with a drum painted yellow, which he gave to the prairie-chicken headman. He said, " When I sing the song, let your wings droop and drag on the ground." Then he sang the first song:—

tsī́tsk·akā́ta,	tsī́tsk·akā̀tawe	nā́pure	t˗k·ātk‘,
Little prairie-chickens,	little prairie-chickens,	breasts	outward a little put,

dī́pe	ṓopik·.
your tail	is square.

He sang the next song:—

awaxā́we	h̄̀rerìək‘,	bī ík· akawè,	bapā́kuritā̀
Mountains	among them be,	look at me	day after day

bī ík·akawe.
me look at.

(This means that the dance will last for a long time.)

The prairie-chicken then spoke to the man: " You have been refused admission. Go back with those sixteen members, have children,[1] and dance with them. We'll see which of us is stronger, they or I. Do not let yourself be adopted by any of them now; for all that, you will have more children than any of the rest."

Some time after this the visionary with his wife entered the next Tobacco dance. " How do you come in?" " I have joined you. You refused to adopt me. Now I make a dance of my own. You are dancing without a drum, I'll make a drum and dance with it." So he had one made exactly as he saw it in his vision, with yellowish-brown paint, and used it to dance with. He said, " I'll have more children than you. You have only sixteen members in all." Thereupon he began to adopt some new members every year till he had seventeen. " We'll plant Tobacco now." He had a dream in which he saw the cactus-berry, onion, beaver dirt, and mole dirt. He made a collection of these substances and plants and said he was going to use them. Thus he began to plant *mixed* Tobacco. He said that he had a dream ordering the planting of Tobacco. By this time the Founder, his 'son,' and his 'grandson' were all dead. The fourth novice said to Blanket-owner, " I will join you." Then Blanket-owner refused to allow it. So the man refused gave him a horse and was then allowed to look at the mixture. " This is the proper mixture, but we have never used it heretofore. Let each take half of it, then we'll dance together." The other man asked, " What shall we use to start with?" Blanket-owner said, " I'll get some buffalo tongue and bones, we'll chop the bones fine, make tallow out of it, and we'll make and use hash." They had a planting without songs.

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[1] That is: "proceed to adopt outsiders."

Two young men who were comrades said, " Let us sleep there and see what will happen." Next morning one of them asked the other whether he had had a dream. " Yes, a bear showed me how to mix hash with rosebush berries, and I know something about that Tobacco now." " We'll join," said the two friends, " when we have grown older." After some time the two got married, and the dreamer then said, " I'll join in the ceremony and stay for some time, then I'll adopt you and we'll enter without being adopted by anyone else, I'll stay one month before I adopt you." So the two comrades also became members.

The owners of necklaces continued to use them, turning them over to one another. When the man who originated the use of drums was old, he decided to make a necklace for himself and his ' children.' In the old days when they wanted to be adopted, they had to ask for it, while now the adopter takes the initiative and asks someone to become his ' child ' after giving the novice a present.

A certain young man dreamt in the Tobacco garden and saw a white bird. He adopted someone and told his ' child ' to get the head of a white bird and pass it on to *his* 'child,' also to use the Tobacco necklace. Thus the bird continued to be handed down. One old man had a vision of a paunch-skin and of the Tobacco mixture. " We'll use this in planting." He also made a stick to tie his paunch to. One of the men initiated by the drum-visionary dreamt of the adoption lodge. He went to the head of the Eagle chapter, told him of his vision, and said, " Our fathers never told us of the lodge." The other said, " I have had the same dream. If we dream again, then we'll make it." He saw it again and then said, " Let us start it, and let one of your children adopt someone."

In the beginning there was only one Tobacco society, but now they were all splitting up. Now also all novices had to pay in order to be adopted, and invariably bows and arrows were included in the initiation fee. The novice dreamt of the inside of the lodge, thus discovering how to fix it up, then asked and received of his ' father ' the privilege to erect the lodge. For this he paid his ' father ' ten horses, then he himself fixed up the inside. The ' father ' said, " I was never told about this, but it must be right." Then horses and other property were taken to the lodge. The one who had the bird medicine said to his ' father,' " You have forgotten one thing." " What is it?" " That they put buffalo chips along a line and put medicine sacks on top, and that back of it there is a buffalo robe headed towards the mountains." " It must be so, but I have never heard of it. It is good." Only Tobacco is taken out of the sack at an adoption. The novice had a vision of the song of rejoicing sung and of the man sent for water, and of the building of a fire. He dreamt that this was all there was to the adoption lodge and told the rest accordingly. My grandfather was the first one to exchange presents at an adoption; he and the other man exchanged the best horses they had.

Until this time there had never been a leader in marching to the Tobacco garden. Once some young men went on the warpath, accompanied by a woman who lay with them. They were chased by the Piegan. Though they formed breastworks, they were driven away from them and the woman was captured. One of the Piegan had an otter which he would pack when on the warpath. By its aid he fetched horses and performed other deeds. The Crow woman saw it and decided to steal it since it was a big medicine. She stole it and ran home with it. She was overtaken by a snowstorm when along a big river, and she slept there with the otter by her bosom. The otter gave her a dream and told her she was a woman but that if they got home in safety they should join the Tobacco and take the lead in going to the garden. "We'll get home in safety, your people are in such and such a place." She went on till she got to the Crow. When home, she thought she would join in the Tobacco dance. This was above where Yellow-crane's land now is. The Tobacco dance was started, and the woman went there with her otter. She said to the members: " I'll tell you something now. Don't ask me anything. You have no leader and it does not look right. We[1] shall be the leaders, and some good will come of it. When a captive among the Piegan, I saw how great this medicine was and decided to steal it and run away. A snowstorm caught me, and in the night the otter spoke to me. He told me I was a woman so he could not do much for me, but he would be leader with me. Do not start tomorrow; I shall send a hunter to bring a buffalo head, then I shall have hair cut to stuff the otter with.[2] We'll start the following day." After she had the skin stuffed, she went into the lodge where they were dancing and had twelve eagle feathers brought there. These she took and tied them below the otter's neck, then put a crown of ground-cedar on her head, donned a robe, and held the otter in her arm.

After a while she had a daughter. This girl was adopted into the Tobacco society, and when she married, her mother gave her the otter. Thus the daughter came to take her mother's place in the Tobacco procession. When the man who had adopted the daughter died, she mourned for him, going about crying near prairie-dog holes. She saw the prairie-dogs performing the Tobacco dance, with their chins painted red and with curlew feathers in the back of their heads. She was carrying the otter in her arms. Now she saw how a leader should paint. She was a young woman at this time. She adopted a male captive named Half-red and told him to get a lodge. This had always been handed down; she bade him take one not handed down before.[3] A man had adopted both Flat-dog's[4] father and the woman adopting Half-red. This woman asked Flat-dog's father to turn over the lodge to her ' son,' who thus became the third owner. This happened in my lifetime. The woman got to be very old, so old her body would crack when she moved about. Then she turned the otter over to her daughter, bidding her lead as she had done before. This woman was the mother of Paints-himself-black. I do not know who has the otter now.

Originally ten horses were paid for adoption lodges. Today the price includes only one horse and four different objects. The chin and two spots under the eyes were formerly painted red by lodge-owners. Later, they did not paint thus any more, but instead painted the forehead red, streaked the face with the same color, and bunched up the hair of the head and tied it. Lately white clay has been used for painting.

The account quoted may not be strictly accurate even for the more recent period of the development of the Tobacco ceremony, yet it certainly reflects very well a number of characteristic Crow conceptions. Foremost among these is the view entertained as to the mode of acquiring ceremonial privileges. Invariably originating in a vision or dream, these are found to be transferable according to a sort of apostolic succession, inasmuch as the visionary may adopt novices to participate in the ceremonial possessions, while these in turn may pass on their privilege to *their* ceremonial children. Independent lines of ceremonial descent are traced back to independent dream revelations; so are all innovations even within the old lines. So far as the history of new organizations is known, it corresponds closely to the pattern laid down in Crane-bear's narrative. In the second place may be mentioned the incidental statement that in the old days only old people were members of the Tobacco organization. This was confirmed by a variety of independent informants, all of whom contrasted the old with the new order of things, where even young children are eligible for initiation. On such occasions one may hear cited the prophetic warning of an ancient Crow: "When all of us shall belong to the Tobacco society, we shall not be much of a people" (cf. p. 135). Finally, the motive for joining coincides with that given for the desire to secure almost any ceremonial prerogatives, viz., the quest of material benefits, suggested particularly by the well-being and wealth of formerly poor people who had become members.

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[1] That is, she and the otter.

[2] Previously there had been very little stuffing among the Piegan, but the woman developed this feature (Crane-bear).

[3] This statement is obscure.

[4] Flat-dog was still living in 1914.

While Crane-bear's account lays emphasis on the gradual elaboration of ceremonial detail with new revelations, Bull-all-the-time, whose story follows, slurs over the development of the several chapters and accounts for features of the present planting ceremony itself by projecting them into the past.

An old man in mourning was roaming about, fasting. In a day dream one of the stars appeared and gave him the Tobacco, which was the star itself. Handing the man a small package, the star taught him this song:—

hirɛ̄́r	akḗ wik;	í'tsi'tsíə	akḗ wik·.
Of these	the Owner I am;	of the Tobacco plant	the Owner I am.

The mourner returned to camp and cast about for followers. He got three married old men. "What shall we do?" "Wait, we'll get more followers, then we'll see what we are to do." They did not know what kind of a song to sing. The visionary made four rattles from the hide taken from the flanks of a buffalo. "With these you'll keep time. A woman shall prepare a feast, and after the singing we'll eat." He told one woman she was to have the office of cook and should afterwards get property thereby. During the singing he distributed songs. The woman was to pass eatables round. He told them to wait for the opening of the buds, then they were to plant the Tobacco. When this time came, he distributed equal quantities of Tobacco to all. They got all the ingredients necessary for mixing. They dug a hole in the ground, made a wreath of grass round it, and placed *ìəxerùxpe* underneath. They sang four songs and threw in all the different ingredients except buffalo chips. Then tobacco smoke was blown in. Next day buffalo chips were crushed fine between the fingers and placed with the other ingredients. There were ten members with their wives at that time. Next day they painted up in a preparatory lodge. They had bags. In coming out they sang a special song:—

"í‘tsi‘tse	ḁ̀sbā́wik·."
"Tobacco	I'll take out."

Four times they sang this, then they came out as today. While going to the Tobacco garden they made a noise in imitation of the crane. They stopped four times on the way. After the fourth stop all made a dash to the garden with their medicines. They cleared the ground of weeds, then they took the bark of trees, spread it on the field and burnt it. After that they took buck-brush (?), and with it swept off the ashes from the fire. Before planting they sang this song:—

hirén	awúsawā́wik·.	ṓpe	apā́mbā́wik·.
These	I'll paint.	Tobacco	I'll raise.

Then they took ropes, marked rows a certain distance apart from one another and stuck cherry sticks into the ground.[1] They sang four times before planting. Selecting a good (i.e. a brave) person, they made him run across the first row where they were to plant and back again. Today this practice is still followed. Then they planted the seeds, went away, and came back, four days later. Then the mixers hid themselves. Those who went to look reported that the Tobacco was peeping through the ground. They came home, singing praise songs:—

ahṓkacī̀ra	bas'ṓpuəc	apā́re.
Thank you very much,	our Tobacco	grows.

Then ten days later[2] eatables were prepared in great quantities and they lunched near the garden. They went to one end of the garden, burned *isɛ́* in one corner, and put a pipe toward the four quarters for the Tobacco. This song was sung:—

āk‘bḁ̀pā́re	cṓrək‘?	ak‘bḁ̀pā́re	bīk·
The Planter	where is he?	The Planter	am I.

Fourteen days later they went again to harvest the Tobacco. At a later period, they had adoptions. They pitched an adoption lodge. The first woman to lead the procession from the preparatory lodge wore a ground-cedar wreath and put some ground-cedar leaves into the bowl of her pipe. They sang the proper song four times. After four stops they entered the adoption lodge. Four times they sang inside, then they sent a warrior for water. On his return he made a speech as today. After that all of them sang. Drums were not used; in the beginning they used rattles exclusively. Presents of robes, powder horns, and other articles were given, then they started the Tobacco dance. Next winter they began to use drums, everyone liked this better. The privileges of raising the lodge and of passing the food began then.

The dancers increased in number. The í‘tsi‘tsíəmbicɛ̀, my own chapter, is the oldest of all. The Duck chapter was dreamt later so were the Weasel, Wolverene, Eagle, Otter, and Yellow Tobacco chapters. Recently, there were added the Strawberry and Pine chapters. The founder of the Yellow Tobacco chapter had a vision of a man dressed in yellow, standing at the edge of the Tobacco garden and singing towards the Tobacco. When the visionary came home, he dressed up all his adopted children in the manner of the visitant. The Weasel chapter was dreamt by an old man on Cloud's Peak, who saw a man dancing with a weasel in each hand and a whistle in his mouth; a weasel strip tied to the right bang, and a whole weasel skin round the head for a crown.

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[1] To mark the rows belonging to different individuals.

[2] Bull-all-the-time fails to mention the customary visit that took place seven days after the first (p. 175).

In 1911 Gray-bull gave the following tradition, which long ago he had elicited from an old man.

Once an old man was fasting on a mountain top. At night the stars from above came down; there were four men, each having a star in front of himself. They began to dance and sing with rattles and the visionary joined them. The first man sang four songs and told the others to sing too. He said, "My child, remember what we have done here." The second man sang only one song, and so did the third. The fourth man struck the ground with his rattle and also sang one song. This made seven songs in all, accordingly the visionary believed these men were the Dipper. They put the shining objects they had in front of them into one bag and gave it to the visionary. This is why the Tobacco we plant is regarded as being stars.

The man brought back the Tobacco and did what he had seen on the mountains. He called four other Crow and sang a song he had heard. He made them act according to his experiences and told them he was going to plant on cleared ground in the spring and would harvest in the fall. The four Crow consented and had it announced in camp that people were to move towards the mountains and find a nice spot under an aspen grove. They moved. The visionary called these four men and their wives, also two additional couples, he himself being the seventh. He distributed the plant among them. They hoed the ground, cleared it, and laid dry grass on top. The founder said he would show them how to do it and they would enjoy it as children enjoy playing. He told them to put twigs on top. He took a flint, struck fire, and made burning firebrands for the rest. The entire Crow camp had turned out and all were looking on. He sang his bird song, flapping his eagle wings at the same time. At the close of the fourth song he said, "*kahé*!" (Ready!) At this signal they put the firebrands down at one side on the grass, then he took his wings, flapped them and sang. The fire spread, burning up all the dry grass. The other people went home, commenting on his power. The fire left the ground black. The founder sang a song and pushed a young man, who ran across the field and back and thus reported on his return:—

dúxiwarḕk·	ítsik·ā̀ta	bā̀rapī́u	,	ictáxiə	burutsík·.
I went on the warpath.	In safety	they killed an enemy	,	a gun	I took.

karakōm	bṓia,	aratcī́ruəc	awákam,	bā́tsuə	ahúk‘ .
Then	I came,	the gardens you made	I saw,	the cherries	were plenty.

ā́ᵃxe	bicē	ahúk‘.	karakṓm	bṓək,	bṓrə	acḗwak,
Around (were)	buffalo	many.	Then	I came,	as I came	camp I reached,

acisbuxúcuk.	bṓra,	acé	bā́wim,	apsā́ruke	ítsik·ā̀ta
I signaled to the camp.	I came,	the camp	I got to,	the Crow	well

ā́ra‘kuk.
were faring.

All the seven original members ran across the field, i.e., each in turn sang a song and had a runner run across the plots. After marking the ground the founder called the young men and women to plant the Tobacco.

When the seven had done, they went home, prepared food and sang. Before moving camp the next morning the visionary ordered the other members to take trade tobacco, mix it with fat from the back of a buffalo and lay it under the head of their pillow. They moved a short distance. They camped four times before making their final departure from the garden; every night the seven men sang. The founder said, "You may go where you please and hunt buffalo." When the chokecherries had formed balls, they planted; when the cherries were ripe, they got the crop. On the fourth day after the planting they looked at the spot, and the dirt had raised a little. On the seventh day[1] they went back again and one of the seven members reported that the plant was just coming out. On the tenth day a third one went to see the garden and reported, "Its belly is above the ground (*ḗre awísək'*). On the fourteenth day a fourth man went and reported, "It is growing all right." When the berries are ripe, the white flower is on the Tobacco plant; when the seeds are black they pick them. The seven gathered the seeds. Some were marked with stars; these were taken on the warpath, some used a string of them as a necklace, others tied them to the back of the head. In sighting the enemy's camp they sang a Tobacco song and pointed towards the camp, saying, "I'll take a gun," or "I'll take a horse." The seven original members adopted others, and thus the society grew.

At the first planting one of the original members slept at the garden, heard a song and saw the raising of the pipe, which is put forward and raised a little higher at the close of each successive song until at the close of the fourth it is pointed straight up. This man bade the Crow dance with the pipe at the end of the ceremony in order to aid the growth of the Tobacco. The privilege of dancing with the pipe is now (1911) monopolized by two women, one of whom is Among-the-grass.

Little-rump gave the following fragmentary account:—

Before there were any horses a young man was fasting on several mountains and during his quest he came over the divide by the Musselshell River. While crossing it he got to a wooden gun rod, to which a paunch (ɛ́raxe íce) was tied. He looked round, but no one was there. He heard someone talking inside the paunch. He took it under his blanket and heard it talk, saying, "When you go to the enemy, let us get out." When he got to the enemy he opened the bag and men came out of it. They killed the enemy, bringing back scalps and guns, then re-entered the paunch. He went to another tribe, opened his paunch and let the men get out. They brought back horses, which he distributed among the Crow. Later he achieved much through the paunch, killing enemies and bringing horses. The Crow raised the horses and were not so poor as before. The visionary did not tell the other Indians about his paunch. He went out to drive buffalo towards the camp and became chief of the entire tribe. When old he dreamt songs through the paunch. When very old, he took out its contents and planted them in the ground. Some others helped him. After it grew, they tied it up in bags, and when any of the men went on a war party they took one of the bags along and killed the enemy or brought back horses. The paunch-owner lived to be very old, so old that his skin would tear. He had a son and gave him the paunch, and he kept on planting the Tobacco till he got very old and died. He had a son and gave him the paunch in turn, and he continued planting till he got so old that this skin tore and he died. His son planted Tobacco also. He had a yellow meadowlark tied to his heart. Then they began to adopt. They believe this came from the stars, that the stars gave it to the Crow. Thus we became people.[1] Some dreamt and saw it themselves and added the Mixer and other officers, and the adoption lodge, one person buying these rights from another. The Crow adopted some Piegan, then the Piegan also began it. In the spring when the sage begins to grow they plant Tobacco. In the old days after harvesting they had a dance with the seeds on returning to camp. This is not done now any more. In the old days there were not many members; no children were adopted then, but mostly old people.

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[1] It is not certain from my notes whether this means after the planting or after the first inspection; I incline to the latter view.

As to the origin of the Piegan ceremony Bear-gets-up was more specific:—

A war party of Piegan came to the Crow and found them inspecting their Tobacco, which was coming up fine so that all the Crow were satisfied. The Piegan, to the number of about twenty, came to the garden after the Crow had departed and pulled out the Tobacco. One of them, however, said, "You have no right to pluck these out, these are dangerous. We are trying to have good luck." He picked them up again, wrapped them up in a bag, carried them with him, and kept them under his pillow. He dreamt that someone was talking in the garden, saying, "We shall get even with these." When he awoke, he arose, roused his nearest relatives, and fled with them. They went some distance at daybreak, then they heard some shooting. They got home in safety, the rest were all killed for destroying the garden. The Piegan took his Tobacco home and repeatedly dreamt about it. Now a good many Piegan are in the Tobacco dance; one Crow adopted a Piegan.

To return to the Crow origin traditions. Pretty-enemy gave the following account:—

Some men were on the warpath. On the way home one member of the party had a sore leg, and they had to leave him behind with a hut and provisions. His leg got well and he approached the camp. He was traveling slowly with the aid of a cane. On his way he slept and heard a voice saying, "A whole camp is coming." He looked and saw a group of small people lined up as in a Tobacco procession. Everyone had a buckskin suit and all were painted red; on the forehead they had strips of the back skin of buffalo, which are now represented by juniper crowns. All the people wore these, and each was carrying a Tobacco sack. The dreamer heard a voice say, "Do you know what is in this bag? What is on the back of these people they are going to plant. They will let you see it. I'll tell you how they mix it. All those people are very old". In ancient times only old people were in the Tobacco ceremony. The voice added, "In the bags are prairie-onion, mole-dirt, bear's root, 'prairie-dog's coal' (a vine)." Tobacco was not mentioned. I think bear's root is the real seed. Lately, combining the three substances, the Crow have called the mixture 'Tobacco'.[2] The visionary made a vow: "If I live, I'll do what I saw in the vision." He got well and began to plant bear's root. Afterwards buffalo or elk manure and other ingredients were added.

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[1] A favorite expression, evidently meaning "people of consequence."

[2] This of course is an erroneous view.

In a collection of Crow traditions[1] I have already published two myths told by Medicine-crow, which connect the Tobacco with the story of the creation. Old-Man-Coyote, whom my informant alternately identified with and distinguished from the Sun, after causing birds to bring up mud from the bottom of the sea, fashions the earth from it, and then discovers a number of independent beings, of which the Tobacco is one.[2] In the longer variant the Sun gives some general instructions as to the planting of Tobacco, then the narrative merges into the following account of how the Tobacco dance was started.

A poor boy went out fasting and the Sun came and adopted him, ordering him to get an elk bladder on his return, tie it to a pole, and place it at the back of his tipi. The boy said, "If I carry this around with us, it will perpetuate our living." He took a Tobacco seed case, placed it in the bladder and hung it round his neck, using this on war expeditions. There were no horses then, dogs were used for packing. There were no matches, no guns, and they made fire by drilling wood. When the boy grew older he became a chief and was like a father to the Crow. He said at last, "I am getting old, I'll plant this medicine of the Stars for you." He called all the men and women. "The mountain likes this medicine." He cleared the ground, sang with his medicine, and planted it. They moved camp and roamed about. After the planting the dance started. Buffalo tongues were used at the luncheon at the dance. "When the berries are ripe, we'll see what we have planted." They came back to the garden. "When the leaves turn yellow in the fall, we'll gather it and each one will keep some of it."

When they were journeying, he said, "Four days after breaking camp some of you must come back and see this. Then we'll take our first look at it." On their return he said, "My children, how is it getting along?" The inspectors replied, "It is just peeping out of the ground." He had big cottonwood lodge poles cut and had made a big tipi. "We'll have lots of eatables and sing there." They put up the lodge. First they went to a preparatory tipi. "We'll use four stops before entering the lodge." He gave them a special song for the first stop; it has no words, but represents the coming back of the wild geese in the spring. "All the birds coming back have a leader. We'll have one too." So he gave his wife the pipe and she led the procession. This established the precedent. They had four stops after coming out. After they got into the lodge he stood up and said, "On any good day, when people are glad, they always drink water." He ordered an old woman to make a soapstone bucket and put it some distance outside the lodge. "On your way to the water and back, you must think of some of your deeds, and you can tell us then of the killing in the evening. Inside the altar there shall be four rows of charcoal; when young men come back from the warpath, we'll use charcoal to paint up and dance with if they have killed any enemies. Everything that grows shall turn whitish (fade). This ground-cedar shall be the only thing to remain green, both winter and summer." Then he said again, "What we plant shall be inspected again seven days after the first inspection. If this grows, there will be nothing on the face of the earth similar to it, for Old-Man-Coyote and the Stars gave it to me." The chief asked whether the plant would be eaten when matured. "No! The seeds will be owned by the Crow Indians. You will tie them up in small bags, and as they increase all the Crow will have some Tobacco later on." He called their 'children' and said, "Distribute this among yourselves, all shall have of it. You may keep the seed case, use the leaves to smoke." He stood up and said, "Take all kinds of weeds. Before the seventh day I want to sing with the weeds in imitation of the Tobacco to help its growth before the second inspection. We'll sing four songs, the last time raise them up higher. On the seventh day the Tobacco will be that much higher." The words of the songs were as before:—

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[1] Lowie, (c), 14, 15.

[2] The others were said to be Magpie, Coyote and the Medicine Rock.

Hírawe, cōn awɛ́ díəwā́wik. (Female comrade, where shall I plant?)

He told them to have a feast after the song. "After seven days we'll send men there." On the seventh day they went. On coming back they said they had seen a white-flowered plant growing that they had never seen before. They had the same ceremony then. Twelve days later they were to go again. "Then you'll see it a good deal taller." They went again and reported that all were tall this time. "You'll see it again in fourteen days for the last time. It will be about so high." They moved camp and roamed about. "At the ripening of the berries when the leaves turn yellow, we must take back our seeds." They moved. He said, "Wait till I burn incense." He burnt *isɛ́* in the four corners. "Now you may gather it." He sang a song four times, then he broke the first seed off, then the others did the same, each piling up his own lot. Not all the plants were found to be alike. "As there are two kinds of animals (sexes), this is also of two kinds: long and short. This long kind you'll smoke and keep the seed cases to plant every year. The short kind you shall plant and merely keep (not smoke)." The Crow kept the short kind, the Hidatsa the longer kind, when they separated. When they got it, he said, "Wait, we'll make another one." A sweatlodge was put up and Tobacco seeds placed on top. Tobacco songs were sung inside. He then prayed to Old-Man-Coyote, the Stars, and other beings. He said, "We are putting up a sweatlodge and are going to sing." He called them and said, "You are all holy and asked us to do this. If any of my children are sick, they will get into the sweathouse and if they get well they shall enter the Tobacco society." There are various causes for joining. Some say, "If I get a good horse this summer, I'll join," or, "If I fare well throughout the winter, I'll join the society." Pregnant women will say, "If I bear a child and it lives, I'll join the society." Young men on the warpath would say, "If I come home in safety and bring back a horse, I'll belong to the society." Even today, if a child is sick, the parents will say, "If it gets well, I'll join the society." The founder said, "This affair belongs to those powers alone. They have supervision of it. They may show you something new; and if so, don't fail to use it also."

Finally, I will give an abstract of the account furnished by Curtis.[1]

First-worker (Old-Man-Coyote), gave a man created from clay some Tobacco, telling him that if he scattered it against people he was angry with they should be afflicted with sores. The man refused to do this, saying this was a foolish procedure and that he preferred to strike his enemy and to have his enemy's heart turn weak. First-worker then told him that through the Tobacco his people should multiply. In reply to the man's request he gave him a song and the incense to be used in the Tobacco ceremony. The actual institution of the ritual is ascribed by Curtis's informants to No-vitals, chief of the Crow seceders from the Hidatsa.

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[1] Curtis, vol. 4, 61 f.

SONGS.

According to Medicine-crow everything on earth that is endowed with supernatural power figures in the songs of the Tobacco ceremony. He enumerated the elk, antelope, mountain-sheep, black-tailed deer, beaver, otter, weasel, wolverene, wolf, coyote, squirrel, eagle, crane, swan, bear, buffalo, horse, eggs, sun, earth, summer, winter, day, night, thunderbird, God (ak-bā́tət-díə, "the maker of all things," the usual rendering of the missionaries' concept), moon, dawn, morningstar, evening-star, dipper, day-star, and medicine rock. He also mentioned such modern phenomena as cows, boats, trains, hogs, sheep, houses, garden vegetables, letters, and white men. The great variety in the songs is explained by the fact that their number has been constantly increased even to the most recent times. As Gray-bull explained, anyone might hear Tobacco songs in a sort of vision. If a horse is simultaneously seen, he will be mentioned in the song. The special practice of sleeping in the garden for the purpose of dreaming songs has been described.

In the preceding account I have at different places inserted the words of the songs. Below I give some additional Tobacco songs recorded during my first visit in 1907 and without accompanying information as to the time when they were sung.

1.

í'tsi tsìə	apā́ᵃmbawī́əwəc;	bī́wē	ahú'tseruk.
The Tobacco plant	I am trying to raise;	it is mine,	there is plenty, it is said.

apā́r-itsí'tseruk.	bī́wē,	ahú'tseruk.
It is growing well, it is said.	It is mine,	there is plenty (i.e., I have plenty).

2.

arapā́rik·ō	dicí'tsēk·ik·ē;	karapā́rik·u,	dicí'tsēk·e.
As it grows,	it makes them dance;	when it has grown,	it makes them dance.

bā-hirā́	dāc	ítsim	dicí'tsēk·e.
Now	its heart	is good (it is glad),	it makes them dance.

hḗi!	kam	burúake,	ḗk·okè	burúakek·ōkȅ,	burúakek·ōkȅ,
He i!	It is	down below,	there	it is down below,	down below,

kam	burúakȇk·okē.	hḗ+i!	hirā́awa,[1]	ha hḗ+i!
already	down below.	He+i!	Look here,	ha he+i!

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[1] Explained to be an imperative form used to a woman. I think the form is derived from the term for woman comrade.

3.

hirɛ́n	ba+ictacī́re	bī	rā́cdeokā̀ᵃhe,	hī́re,	hḗrehḕre,	bī
These	White men	me	love,	hī́re,	hḗrehḕre,	me

rā́akeokā̀ ahe,	hī́ri,	hḗrehḕre.
they have adopted,	hī́ri,	hḗrehḕre.

4.

bī,	ítsiʽtsɛ,	birəxbā́ᵃkem,	bī	ík·akawè;	bi
I	the Tobacco plant,	am a person,	me	look at;	I

ítsiʽtsɛ,	bī	bacṓritsiʽtse	ík·akawe.
I am the Tobacco plant,	I	am the medicine-rock,	look at it.

5.

ṓpe	ahúʽtseruc	awaxā́we.	ambā́kaʽkōk.
Tobacco	is plenty, it is said	on the mountain	where I stay.

6.

bā̀+apā́ra-r-ítsi	tsicī́wa	héra, hᵉ̂+i!.
Some plants good	put on your heads (imperative)!	

TOBACCO AND OUTSIDERS.

Though the membership of the society was anciently very much restricted, there was a distinct feeling that the Tobacco was planted on behalf of the entire tribe. Outsiders, to be sure, were not permitted to plant, but they participated in an auxiliary capacity at the garden. Bear-gets-up said that they were allowed to erect a miniature sweatlodge for the Sun in the garden in fulfilment of a vow. Even apart from the ceremony it was possible for them to enter into relations with the Tobacco.

More particularly, the Tobacco might confer good luck on the members of a war party. These might sing as prayers the Tobacco songs they had heard sung at performances of the ceremony. In lieu of drums they would use any means for producing a noise. Each man would declare that he was imitating So-and-so, mentioning the name of a member of the Tobacco society. "If I am successful and bring back horses," they would say, "I shall give them to So-and-so." One informant once imitated Three-wolves, promising to give him a big feast and a blanket in case of martial success. He struck a coup and on his return summoned the Tobacco members and gave them a feast. Ordinarily people would be afraid of mimicking others in this fashion, but on the warpath it was reckoned a form of prayer.

Visions of the Tobacco were not confined to members. Bull-chief slept outdoors one winter and dreamt that a few men appeared to him and sang a song which he still remembered at the time of our interview:—

hirén	itsī́re	buré	ík·akawè.
These	horses (and)	mules	look at.

ik·akawè,	di	ítse	cī́ɔ-mâtsik.
Look,	you	well	for a long time shall (live).

Bull-chief attributes his longevity to this experience. Though asked to join the Tobacco society, he always refused to be adopted.

Child-in-his-mouth was a member of the society but was blessed with a Tobacco vision prior to his entrance. His wife's grandfather had been one of the principal members and passed on his medicine, consisting of a necklace with two little Tobacco bags, to his son. When the son died, the widow kept the medicine. Through her daughter she told her son-in-law, my informant, to take the medicine to the mountains and try to get a revelation. He was so poor then that he had to travel afoot. He went out to fast on the prairie. On the fourth day about sunset he was crying continually while leaning against a rock. The camp was near enough for him to hear the conversation and the barking of the dogs. While hearing these sounds he got sleepy and fell asleep.

He does not know whether he was sound asleep or not. An old man and woman were lying on the ground before him. The woman lifted her head, looked at Child-in-the-mouth, and said to her companion, "Here comes our poor child." The old man began to sing, shaking a round rattle, which was decorated with a scalp tied to the top and also with a piece of weasel skin. He sang as follows: "Tobacco I am calling; Tobacco is growing; Tobacco is growing stronger." The woman wore a belt with blue beads, a buckskin dress, and beaded leggings, the man wore a similar dress. They lay about two feet apart, and in the middle there was a little Tobacco garden. After the first song the garden seemed a little larger. The same song was sung again, and the garden increased in size once more. After the third song the garden got longer than the length of the old couple's bodies. After the fourth song the garden extended the length of about 50 feet. At the end of each song the couple tried to rise. The second time they began to sit up, at the third song they sat erect, at the fourth they got up on their feet and stretched themselves. Child-in-the-mouth then saw a black deer's tail painted red tied to the woman's head, while the old man had a meadowlark on his head with dried grass over its bill. Suddenly a young man was standing between the two old people. They began to sing a song and at its close they pushed him forward and he ran across the garden. This was Child-in-the-mouth himself and when at the other end he looked and saw guns, arrows and bows in front of him at the other end of the garden. These represented the number he was going to take from the enemy. He returned to the old couple and the man asked him what he had seen. He replied, "Plenty of bows and arrows; it is going to be a good year for the whole tribe." The old man began to sing a song of rejoicing. Then he said, "My child is always going to have good luck henceforth; he will have plenty of horses and be wealthy."

Suddenly Child-in-the-mouth awoke. The sun was high. There was no sound from the camp. He walked home and got there. The people were bringing in buffalo meat; he had none but had to beg others for some. That night he put his medicine in place and dreamt further about Tobacco. This time the old man bade him look outdoors, and he saw a gray mare about to give birth to a colt, a white horse. Soon after Child-in-the-mouth went on a war party and captured the gray horse he had dreamt about. The day after his return he went to hunt buffalo and found a stray fat sorrel mare, got it, and killed a fat buffalo, packing the meat on his mare and leading the gray horse. Thus he had two horses. When the camp moved, his wife rode the gray and himself the sorrel. They had pack horses besides. He felt proud now, went on a party and stole another Sioux horse. He set out toward Tongue River, sighted enemies, sneaked round in the dark and stole a buckskin. The enemies pursued him, but he escaped by swimming the river. Thus he had four horses. He went against the Sioux again, killed a man, struck a first coup, and took a gun. He went against the Piegan, two of whom were killed by the Crow. Child-in-the-mouth struck them and took their guns,—the ones he had seen when running across the garden in his dream.

All this happened before my informant entered the Tobacco society. Later the Crazy Dog chapter adopted him. He has never been poor since, but always had plenty, went to war after that, and came to rank as a chief.

SUMMARY AND CONCLUSION.

It remains to consider the Tobacco complex as to its place in tribal life and to connect its constituent features with other elements of Crow ceremonialism and with the observances of neighboring tribes.

In point of importance for the Crow the Tobacco ceremonial can be compared only to the Sun dance. Nevertheless the resemblances between the two are limited to very general ritualistic conceptions or to relatively subordinate matters of detail. The structure of the lodges used was identical except as to size; the ritual of cutting the first tree is somewhat similar; in both cases there is a formal procession from the preparatory to the main lodge; noted warriors recite their deeds and, more particularly, demand food in a specific way; and at one stage an eagle shaman takes part, though in very different fashion.[1] But the underlying conceptions vary enormously. The esoteric feature of the Sun dance centers in the medicine bundle of the Doll Owner through whose aid the pledger wreaks the coveted revenge on his kinsman's slayer; and the pledger does not acquire any permanent ceremonial privilege. In the Tobacco dance there is a body of initiates sharing the ceremonial prerogatives of a definite organization. Yet the Sun dance, in which the general public play rather a significant part, was performed primarily for a private end; while the Tobacco ritual, confined as it was in all its essentials to duly adopted members and notwithstanding their preemptive claims to supernatural favor, had for its avowed object the tribal welfare.

Three other ceremonies invite comparison with the Tobacco ritual, —the Medicine Pipe performance, the Cooked Meat ceremony, and the Bear Song dance. The Medicine pipe is acquired after a vow strictly similar to that of the Tobacco society candidate, but since the Pipe ritual is known to have been adopted from the Hidatsa since the settlement of the Crow on their present reservation it cannot have had any influence on the development of the Tobacco usages. The two other ceremonies mentioned share certain ritualistic conceptions with the Tobacco society but these are for the most part of a very general nature. Thus at the Bear Song dance there is an assembly in a preparatory tipi and a single-file procession to the dance ground with the women in the lead, and *isé* is smoked for incense. A more specific feature highly characteristic of this ceremony but appearing only incidentally in the Tobacco organization will be discussed below. In the Cooked Meat ceremony there is hardly any resemblance as to detail, but the prominence of war captains is as pronounced as in the Sun dance and Tobacco society; sometimes the performance is in fulfilment of a vow.

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[1] Lowie, (d), 38 f., 32, 42 seq., 44, 37.

It is worth noting that in all these serious ceremonials women play a definite and by no means always a subordinate part. They exhibit their shamanistic powers as freely as men at the Bear Song dance, they may act as hostesses at the Cooked Meat ceremony, and in the Sun dance the position of the virtuous women is an eminently honorable one. The prominence of women in the Tobacco society is clear from the foregoing account. They may act independently as Painters or Mixers and in a variety of ways in conjunction with their husbands, the principle followed being that husband and wife are ceremonially one person. In the dancing the women are certainly far more conspicuous than the men, whose rôle at times seems reduced to that of musicians.

As an *organization* the Tobacco society is unique among the Crow. The military societies and the modern clubs completely lack a formal adoption, which figures so prominently in the Tobacco cult; and the Horse society is an Assiniboin innovation limited to one local division of the Crow. Moreover, the form of entrance differs wholly from that characteristic of the Hidatsa or Mandan age-societies. In the latter membership was bought by one group from another group, which thereby renounced all title to the society; the Tobacco novices merely paid an entrance fee which entitled them to participate in the activities of a chapter as additional members. Finally, the Tobacco society does not resemble the bundle fraternities of the Hidatsa, which so far as I understand them are strictly hereditary in constitution, purchase being obligatory on and restricted to the owner's children.

The one significant trait which the Tobacco society shares with the secular organizations of the Crow relates to the presenting of gifts to a person to make him join a chapter; but this is possibly an innovation (p. 134) and in no case interferes with the regular initiation ceremony.

It appears, then, that structurally the Tobacco society is an independent product, presumably of indigenous growth. Indeed, its central idea, that of adoption, is one very prominent among the Crow. Even so common an undertaking as a war party was in Crow theory the result of a vision. The visionary, instead of himself leading, might equip a delegate with mysterious power to steal horses or kill an enemy, and this established the ceremonial relationship of 'father' and 'son' between them.[1] To go back another step, the supernatural power that favors a visionary invariably adopts him, the stock greeting in such cases being, *dī barā́kʻ bā́wik·*, "I shall make you my child." Of course the supernatural being exacts from the adoptive son merely obedience to instructions; these often contain a promise that he shall reap material benefit through adopting others or at least by letting others participate in his power (see p. 130). What happens, then, in the Tobacco society, is entirely deducible from these basic conceptions. The visionary who has seen specific variations in the ceremonial adopts men and women, who thus come to participate in the blessings granted, pay compensation, and are in return empowered to ordain, as it were, new members. But, instead of remaining so many individuals separately enjoying the fruits of adoption, they join coöperatively to plant the Tobacco and promote its growth. It is simply the bond of permanent association uniting adopted individuals that distinguishes the Tobacco society from a hundred cases of individual adoption in Crow myth and ceremonial practice. The conception that ceremonial privileges can be bought,—indeed, that purchase is the normal and orthodox way of acquiring them, is of course common in North America and appears in identical form among the Blackfoot.

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[1] See Lowie, (d), 8.

There are several other widely distributed ritualistic elements that appear in the Tobacco complex. The sweatlodge performance is undergone in the manner characteristic of the Crow procedure on other occasions. Four figures conspicuously as the mystic number, notably in the procession to the adoption lodge. The recital of coups is a highly characteristic intrusive feature and recalls the part taken by war captains in the Sun dance. Finally, the vow found in connection with other Crow rituals to join the society on condition of one's own or a relative's recovery from illness (or some other favorable turn of events) strongly recalls the ceremonial usages of various Plains tribes, such as the Blackfoot and Arapaho.

One feature that occurs in the accounts of several of the chapters is especially interesting,—the *bắtsirəpe* motive. Among the Crow it appears most prominently in a dance known as the Bear Song dance, at which all those with animals inside their bodies are supposed to demonstrate the fact by having a buffalo protrude its tail through the dancer's mouth, an eagle its wing feathers, etc. I do not know the distribution of this notion and the correlated practices. Wissler notes something similar among the Blackfoot and among the Mandan and Ḥidatsa they were recorded by Maximilian, who writes as follows:—

> Sehr viele Mandans und Mönnitarris glauben, dass sie lebende Thiere im Leibe haben, der eine ein Bisonkalb, dessen Ausschlagen er öfters fühle, andere Schildkröten, Frösche, Eidechsen, einen Vogel und dergleichen. Bei den Mönnitarris sahen

> wir Medicine-Tänze der Weiber, wo die eine vorgab, sie habe eine Mayskolbe im Leibe, welche sie hervor tanzte, und die man nachher mit Wermuth wieder hinein complimentirte. Eine andere warf Blut aus; jedoch hiervon weiter unten.[1]

Maximilian actually witnessed the exhibition of a corncob at an Hidatsa assemblage of medicine-women.[2]

The Blackfoot and the Sarsi are the only tribes which share with the Crow a ceremonial planting of the Tobacco.[3] As might be expected, the relationship between the Blackfoot and Sarsi performances is far deeper than that between the Blackfoot and the Crow rituals. In both the northwestern tribes the planting is connected with the Beaver medicine bundle, in both appears the detail of an offering of little moccasins, in both the Tobacco is smoked. None of these features appears among the Crow,[4] while their elaborate organization remains without parallel among the Sarsi and Blackfoot. It is true that Curtis speaks of a Beaver fraternity, but Wissler specifically denies that the bundle owners constituted a society. This discrepancy might of course be reduced to a mere difference in terminology. However, the significant fact remains that the Beaver bundle owners certainly form no organization comparable with the Crow *bacúsuə*. The Blackfoot have no adoption ceremony and the conditions of entrance are quite different. A Blackfoot becomes a Beaver man by a simple purchase through which proprietary rights are relinquished by the seller. Among the Crow there is no such transfer of membership: the tyro does not supersede his initiator but becomes an additional member of the chapter. Further, the Blackfoot have none of those subdivisions and special ceremonial prerogatives which are so highly characteristic of the Tobacco society. The identification of the Tobacco with the stars is another distinctively Crow feature.

The analogies that connect the Crow and Blackfoot performances are all associated with the planting itself: its ceremonial character (as contrasted with the purely secular planting of, say, the Hidatsa); the mixing of the seed with animal droppings; the burning on the plot; and the inspection of the growing plants.[5] These resemblances suffice to establish ultimate community of origin for the practice, but we must remember that there is no wholesale parallelism between the rituals as now practised.

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[1] Maximilian, II, 190. Cf. Kroeber, 434f.; Wissler, 80.

[2] ibid, II, 269 f.

[3] Goddard, 225–227; Grinnell, 268–271; Wissler, vol. 7, this series, 171, 200–204; Curtis, vol. 6 69, 76–79.

[4] There are occasional references to beaver medicines—e.g., the Tobacco chapter was said to have held such—but they are far less frequent than those to sacred weasel or otter bundles. No-shinbone mentioned a Beaver chapter, whose members danced with beaver skins, kneeling during some songs and rising for others. Cf. also Crane-bear's origin tale (p. 178).

[5] It is of course possible that the songs have a common origin, but the words recorded do not suggest a direct connection.

Where, then, did the ceremonial planting originate? Native tradition, as usual, leaves us in the lurch. The Sarsi have it that they received the seeds from a water serpent with injunctions not to pass them on to other peoples. The Blackfoot are equally certain that *they* were the original beneficiaries of supernatural benevolence, and the Crow explain circumstantially how the Blackfoot learned the custom from them. We must accordingly resort to objective considerations.

As between Sarsi and Blackfoot, the marginal position of the former among Plains Indians and their known relations with the Blackfoot indicate that they were the borrowers. Their ceremonialism is certainly much more weakly developed and it is perhaps a characteristic manifestation of this trait that planting is not limited by them to bundle owners.

The problem thus reduces itself to the question whether the Crow borrowed from the Piegan or vice versa. Recognizing that a mathematical demonstration is impossible, I incline to the view that the usage is of Crow origin. In the first place, the Tobacco planting plays a far more prominent part among the Crow than among the Blackfoot, where it merely represents a portion of the Beaver men's activities. For this reason, it has persisted among the Crow until at least 1916, while except for the northern division it has been obsolete among the Blackfoot for more than a generation. Secondly, the planting of Tobacco represents an agricultural technique,—the only agricultural effort of these typical buffalo-hunters. The Blackfoot, as one of the northwesternmost Plains tribes and representing an aberrant branch of the Algonkian family, are not affiliated with any group from which they are likely to have derived the technique. The Crow, on the other hand, are intimately related to the Hidatsa, who planted corn and even tobacco, though of a different variety and in non-ritualistic fashion.[1] Accordingly I assume that the Crow derived their agricultural technique from the Hidatsa, elaborated it ceremonially and transmitted it subsequently to the Piegan, who developed the conceptions received in consonance with their own ceremonial pattern, which in turn was partly borrowed by the Sarsi.

It is a very different question where the Crow may have obtained the Tobacco plant. Above (p. 111) I have quoted Professor Setchell to the effect that *Nicotiana multivalvis* can be produced from the wild tobacco of northern California. This statement should be combined with the following linguistic and cultural data. The only Siouan language in which the Crow stem for 'tobacco' appears is, as might be expected, Hidatsa (*ṓpe*). For example, the Assiniboin term is *tcanī́*, the Biloxi *yanī́*, and among the Stoney I recorded *indukábi*. The Shoshoneans of the Great Basin probably did not cultivate tobacco at all, and such designations for the plant smoked as are at my disposal reveal no suggestion of affinity with the Crow-Hidatsa term. On the other hand, astonishing resemblances occur in the Pacific Coast region. Here we find the Diegueño term *up*, Shasta *ōp*, Takelma $\bar{o}^{u}$p.[1] It is hardly conceivable that we are here dealing with a mere coincidence, but hitherto I have failed to find the links connecting the Shasta with the Crow. An examination of vocabularies from tribes of Oregon and Idaho is desirable. The fact that the Hidatsa share the Crow term for tobacco indicates that the contact with the Far West antedates their separation. The specific difference of the tobacco now raised by the Hidatsa offers no obstacle since they may be assumed to have subsequently adopted the plant raised by the Mandan and Arikara.

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[1] Wilson, 121-127.

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[1] Sapir, 70.

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ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

Vol. XXI, Part III

THE MATERIAL CULTURE OF THE CROW INDIANS.

BY

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NEW YORK
PUBLISHED BY ORDER OF THE TRUSTEES
1922

THE MATERIAL CULTURE OF THE CROW INDIANS.

By Robert H. Lowie.

PREFACE.

During repeated visits to the Crow Reservation, beginning in 1907 and ending in 1916, my attention was directed almost wholly to the social and religious aspects of Crow culture. Incidentally, of course, a certain amount of information was secured as to industrial and economic activities. Since there is now little likelihood of my resuming work among the Crow, I offer my notes, together with data derived from earlier travelers and a study of museum material, as a quite unpretentious contribution to the comparative study of the material culture of the Plains area. I have added a number of data on miscellaneous topics, which could not be conveniently embodied in previous papers.

The drawings are the work of Mr. Rudolf Weber.

January 1, 1921. ROBERT H. LOWIE.

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ECONOMIC LIFE.

General. The Crow were a typical hunting tribe depending primarily on the chase of large game. They did not cultivate the ground at all except in connection with their Tobacco ceremony, which, together with the horticultural technique employed, has been described in a previous paper. The fairly frequent references to corn in the tales either occur in stories avowedly dealing with Hidatsa heroes or reflect the period of renewed contact with the Hidatsa, from whom of course corn, beans, and squashes were then obtained in trade or through gifts.[1]

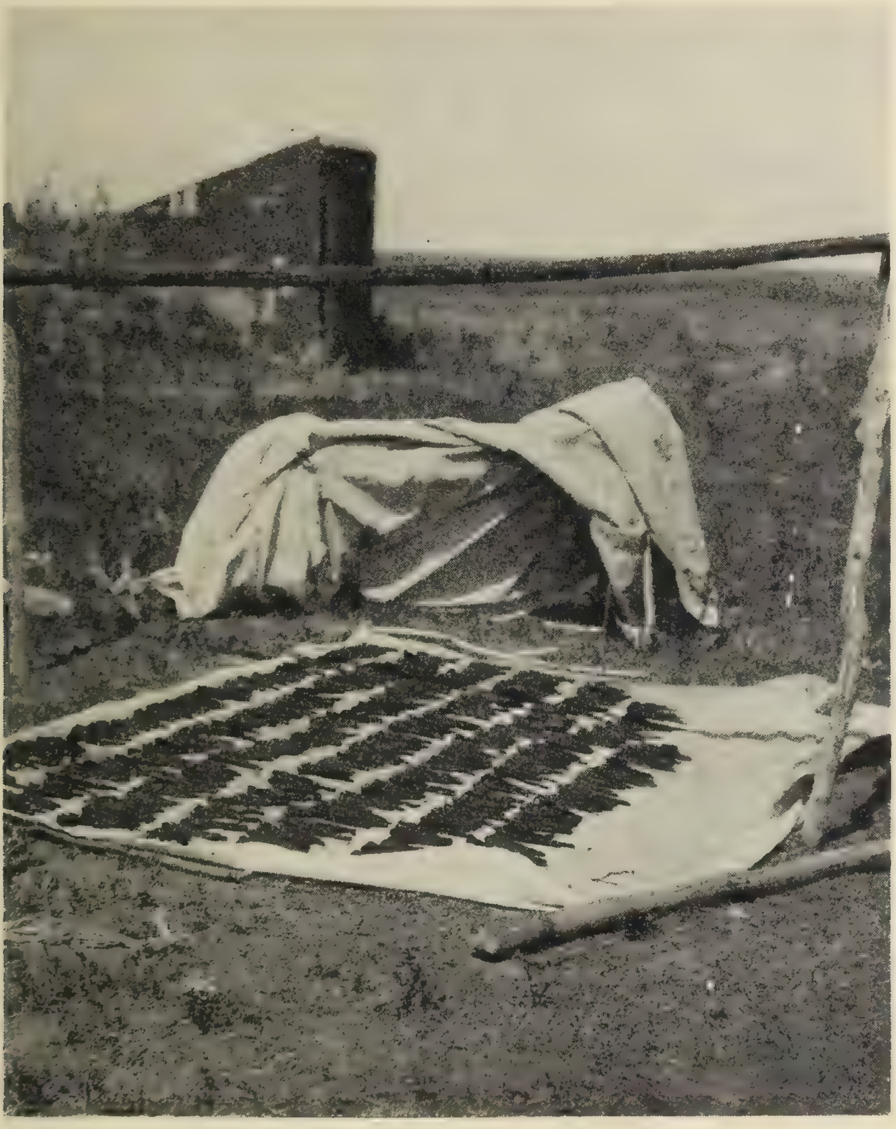

Fig. 1. Drying of Chokecherries.

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[1] In this respect the last sentences of a separation story may be taken as representing a typical practice.

But, while not tillers of the soil, the Crow women, like those of other tribes, supplied a certain amount of vegetable food, digging up roots with their digging-sticks (*batsípe*), gathering berries, and so forth. A partial enumeration of the plants used is given in one of the tales and there are fairly frequent references to the digging of the wild turnip (*ihɛ́*) or other roots.[1] Wild rhubarb and various berries were collected jointly by parties of girls and their sweethearts.[2] Strawberries and sarvisberries also are mentioned in the tales, and of other fruit there were of course wild plums and chokecherries.[3] The latter are spread in a handful on a stone and pounded up with a stone maul, pits and all, then the mass is drawn out into elongated pastry forms left in the sun to dry. (Fig. 1.) These are called *barū́tskitùə* or *bā̀tsura'tsitùə*. Wild grapes (*naxpitsɛ́ ictáce*) were eaten from the bush but also made into a pudding.

One informant said the Crow never ate mice, moles, rats, snakes, water-snakes (*mā'katsk'*), frogs, turtles (*masáxe*), and muskrats. All the tribes to the west likewise abstained from turtle flesh. The Crow further did not eat owls. Skunks were eaten by men when on war parties. Badgers were eaten. "I have heard of some people who ate wolves, but have never done so myself." As stated elsewhere (p. 221), dogs were not eaten except ceremonially in a recently introduced dance, and only sparsely then. There is a reference in mythology to dogs being eaten by people at a time of starvation, but at this point the narrator explained that they were Hidatsa.[4]

Hunting. The individual method of stalking deer was evidently practised, since it is circumstantially described in a folk tale, in which the hero makes for himself a buckskin mask with horns, approaches deer in this guise at their watering-place, and dispatches two head. Economically of course the communal hunt was more significant. Of the four methods of hunting buffalo enumerated by Wissler as having been in vogue[6] the Crow practised three,—the surround, impounding, and driving over a cliff.

The surround was the most recent of these, being dependent on the use of horses. It was also used for capturing deer, as described in a previous paper.[7] There are several accounts in the older literature. I will quote a clipping in my possession, the reproduction in a Boston paper of a Montana Letter to the Philadelphia *Times*; the date is uncertain:

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[1] Lowie, (f), 18, 53, 187, 224, 256, 259.

[2] Lowie, (b), 221; (f), 191.

[3] Lowie, (f), 43, 254, 268.

[4] Lowie, (f), 100.

[5] Lowie, (f), 131.

[6] Wissler, (a), 47.

[7] Lowie, (h), 357.

> It was the great annual hunt of the Crows. The Indians had had their scouts out for weeks in the region north of the Yellowstone, massing the small scattered herds into one large body by a method similar to that used in rounding up cattle. Having got together a herd of perhaps five thousand, they began to push them forward slowly toward the Yellowstone Valley, not stampeding the animals, but forming a semi-circle of horsemen around nearly twenty miles of country, and showing themselves here and there to keep the animals from straying, and to move them forward in the desired direction. Couriers were sent to the Crow village, and soon the whole tribe was in motion for a small piece of bottom land on the river, half surrounded by an amphitheatre of hills. Beyond the hilltops the squaws, children, and old men were stationed with some of the ponies and with red blankets. The most skilful hunters posted themselves, mounted, by the riverside. About noon the great herd, urged on by the scouts, came thundering down the hills into the bottom. Then the people on the hills closed up their line behind them, and the hunters dashed into the herd and began the slaughter. Whenever the animals would stampede toward the hills they would be driven back by the squaws waving the red blankets. The hunters rode to and fro, with wonderful skill, evading the charges of wounded bulls, and carrying on the slaughter with little more trouble than they would have had in a drove of cattle. When their ponies were exhausted they rode up the hills and got fresh ones from the squaws. After two or three hours of this kind of work the chief gave a signal, the line on the hills opened a gap, and the survivors of the herd were allowed to escape. About five hundred animals were killed in all. The tepees were set up and the village feasted for a month, while the squaws skinned the dead beasts, tanned the hides, and dried the meat.

In the myths several hundred elk are represented as being driven down a cliff, and the same method is ascribed to Yellow-dog when leading a buffalo hunt. Antelope, deer, and buffalo are mentioned as being impounded. Old-Man-Coyote is made to show the Crow " a method of catching antelope by a sloping ridge leading to a corral. On each side people were posted and shook robes at the animals to frighten them in."[1]

Since the buffalo drive was generally associated with shamanistic practices, descriptions have been given in another place.[2] Here it suffices to call attention to a few points of comparative interest. The method was applied especially in the fall and varied according to circumstances. Where the cliffs were very high, the herd was merely driven between two converging lines of men and women so as to leap down the precipice and be killed. Where the bank was of moderate height—about eight feet in the instance described—the buffalo were made to leap into a corral in which a space was left open to permit the dragging forth of a buffalo for butchering. In the accounts of buffalo-charming nothing is said about converging rock piles, but they were explicitly mentioned by the oldest woman on the Reservation and also in a description of a deer drive. For catching deer a corral was erected on level ground.

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[1] Lowie, (f), 19, 104, 262, 283, 308.
[2] Lowie, (h), 359.

The following summary of Crow methods of hunting is worth quoting:—

> When their families are in want of provision, or desirous of having a hunt, one of the principal men, who might be called the *trumpeter*, will mount a horse and ride around through the encampment, village, or settlement, and publicly proclaim that on a stated day the whole tribe must be prepared for a general hunt, or *surround.* When the day arrives the village is alive betimes in the morning, and several hundred will sometimes mount their race-horses, repair to a certain designated section of country, which they are to surround. When the men have all had time to get to their allotted stations, they begin to close in, driving the game, principally buffalo, into a circle, and when they are pretty well confined in the circle they commence killing them—until which time no man dare attempt to take any of the game. In this manner they have sometimes caught several hundred buffalo, besides many other animals, at a single surround.
>
> When they are in a country suitable, these people will destroy the buffalo by driving a herd of some hundreds to the edge of a convenient rocky precipice, when they are forced headlong down the craggy descent. This is more dangerous than the other method, as the buffalo, unless the Indians are very numerous, will sometimes rush in a solid column through their ranks, knocking down the horses and tramping the riders under their feet.
>
> They have another method of taking the buffalo, which is in this way:—If they know of a place at the base of some mountain that is surrounded on three sides with inaccessible precipices, and a level valley leading into it, they manage to drive the whole gang of buffalo into this neck and force them up to its termination, when they erect a strong fence across the valley, or outlet, and then butcher their prisoners at leisure.
>
> In a place of this kind I was shown by the chief Grizzly Bear, upwards of seven hundred buffalo skulls which he said had been caught at a single hunt, and which had taken place about four years previous."[1]

Cooking. Stone-boiling in rawhide containers was doubtless in vogue in the old days, as mentioned by Curtis,[2] but I failed to find any individual conversant with the process from personal experience. It was designated as *birə́x-detə waritsī́tuə*, potless boiling. A rawhide jug for boiling is mentioned in the Grandson myth, while in another version a stone kettle is substituted by the narrator; in another tale a kettle is of soapstone and there are vaguer references to "jugs" or "kettles" or "buckets," which I believe to be merely different renderings of the term *birə́xe*, also used for a drum.[3] I can find no evidence for the former use of earthenware vessels.

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[1] Leonard, 260 f.
[2] Curtis, vol. 4, 21.
[3] Lowie, (f), 54, 72, 32, 52, 219.

Of other methods, roasting is frequently mentioned, especially of ribs; cooking in the ashes occurs, and in a purely legendary cannibalistic tale there occurs a somewhat circumstantial description of the steaming process.[1]

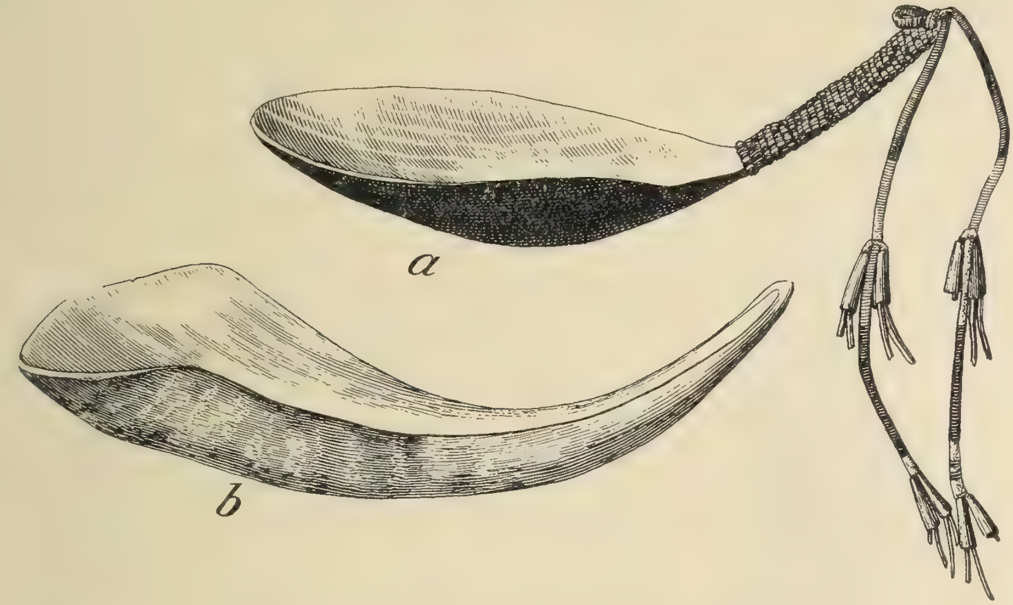

Fig. 2. *ab* (50.1-702, 4002). Horn Spoons.

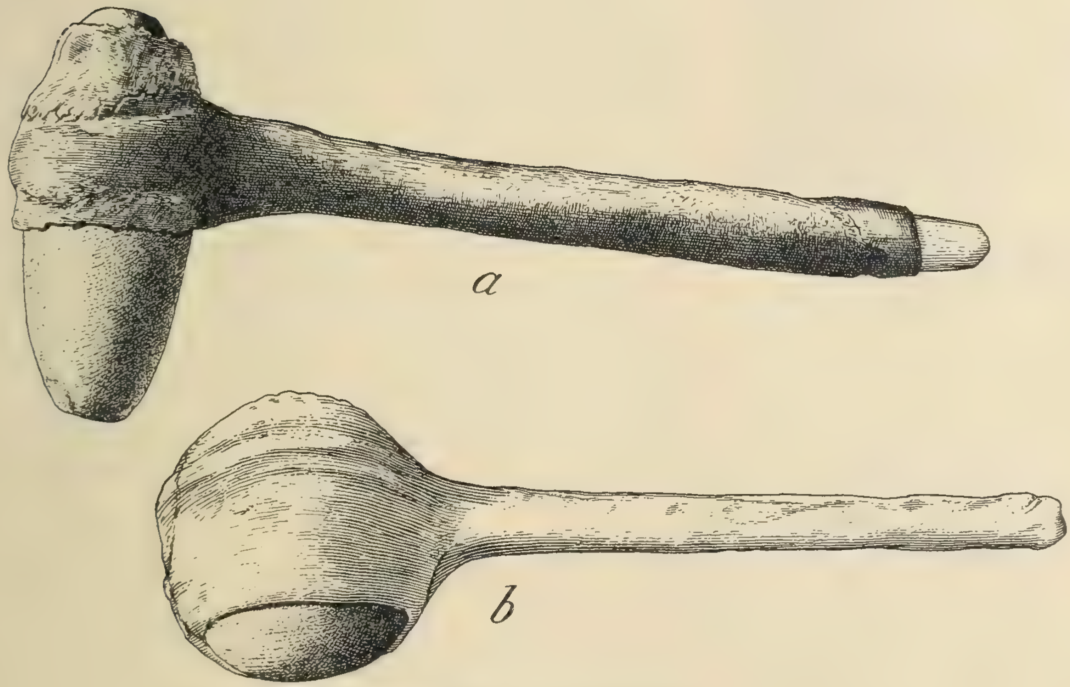

Fig. 3. *ab* (50.1-4004, 720). *a*, Stone Tool; *b*, Stone Maul.

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[1] Lowie, (f), 75, 172, 218, 234, 134, 89.

IMPLEMENTS AND UTENSILS.

Most of the aboriginal tools were supplanted so rapidly by metal equivalents introduced by white traders that very few specimens are nowadays obtainable. The tales refer to knives of chipped stone; stone or bone arrowheads; stone mauls; an awl of unspecified material; and a drill made from the heated prong of an elk antler and used to perforate wood.[1] An antler wedge struck with a stone hammer figured prominently in the Sun dance.[2] The use of flint for firemaking is referred to elsewhere. For sharpening knives the Crow are said to have used a white stone, *bi-rɛ́əxe,* which they carried in little bags secured to their belts.

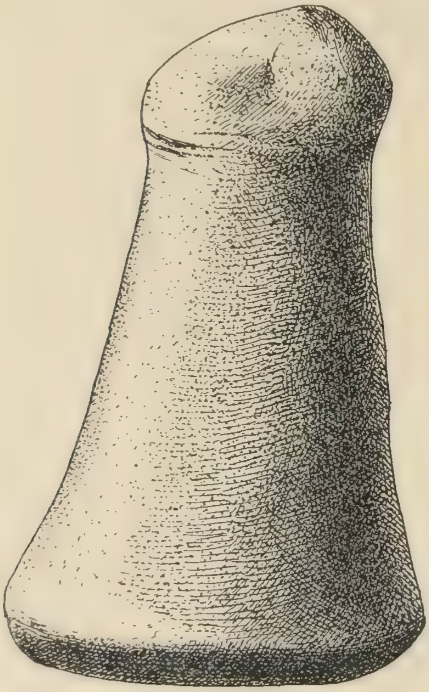
Fig. 4. (50.1-3990). Stone Cherry Pounder.

The implements used in fighting and for dressing skins will be described under the appropriate headings. Of other stone and bone tools the mauls used in breaking ones to obtain the marrow (Fig. 2b) closely resemble those of the Blackfoot in both shape and hafting.[3] A similarly hafted but quite differently formed, pointed stone tool, differs from the egg-shaped Blackfoot maul of Wissler's picture in the magnitude of the exposed stone surface. (Fig. 2a.) For pounding cherries the women used even in my time pestle-shaped stone hammers (Fig. 3) while the fruit was placed on an unworked flat stone anvil, though Curtis mentions mortars hollowed out of stone in this connection.[4]

There is no ordinary bone awl in the Museum's collections, but a steel awl mounted in an antler handle is shown in Fig. 5 and a tiny bone awl forming part of the Sun dance Doll bundle has been figured in a previous publication.[5]

The firedrill passed out of use long ago. A rather poor model obtained from Sitting-elk (Fig. 5) is nevertheless remarkable in proving that a compound shaft after the Shoshoni fashion was at least sometimes used.[6] According to Three-wolves, the ancient Crow used a hearth of driftwood (*ƀarī́əxìə*) and for the drill a sharpened stick of the kind of wood employed in cleaning a pipe bowl, to wit, *íptsi'tsixaxe.* Buffalo-dung or rotten sagebrush bark was sprinkled for tinder. Another informant said the hearth was of cottonwood, the drill of wild-grape (*naxpitsέc ictácia*) or sagebrush (*ī́sask'axū̀we*) wood. Drilling wood for fire-making was called *manū́paxùa.* Burning buffalo-chips were sometimes impaled on sticks to save the trouble of making fire anew.

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[1] Lowie, (f), 18, 78, 189, 219, 295.
[2] Lowie, (d), 32; Curtis, vol. 4, 69.
[3] Wissler, (a), 21.
[4] Curtis, vol. 4, 176.
[5] Lowie, (d), 19.
[6] Lowie, (a), 189.

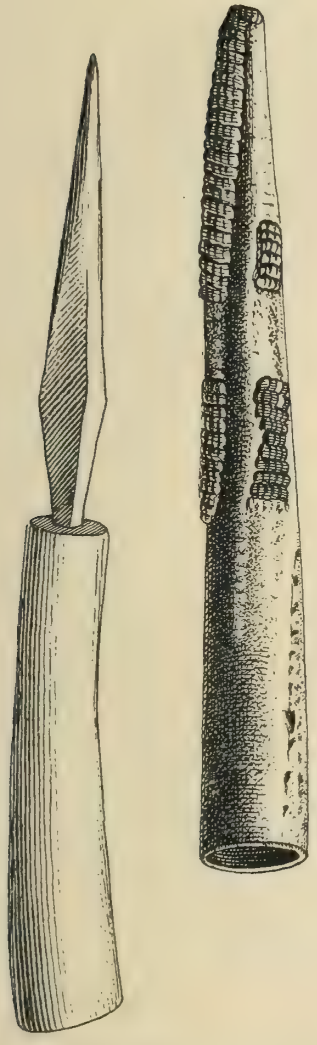

Fig. 5. (50.1-3934). Steel Awl.

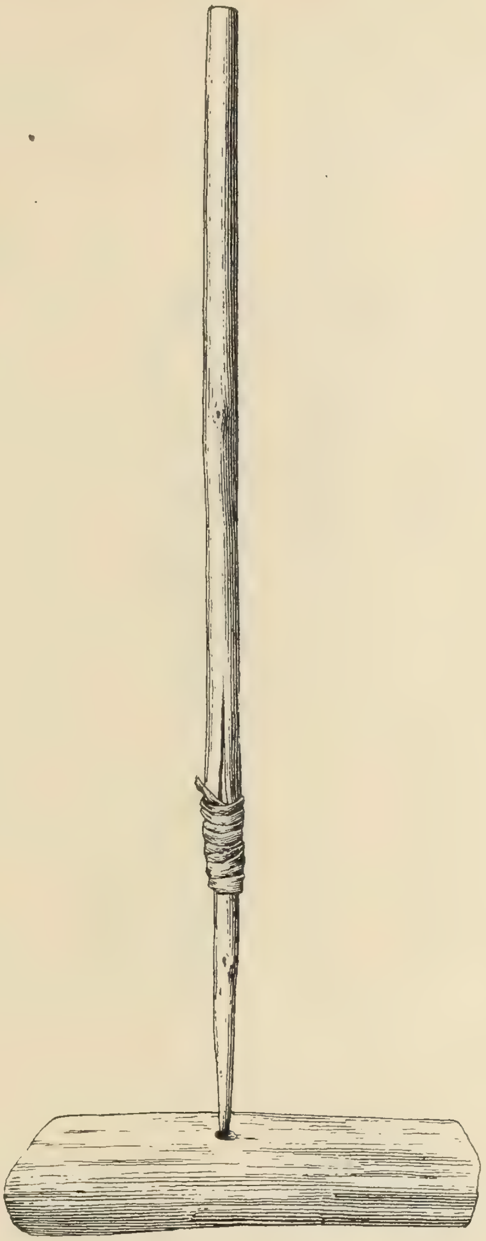

Fig. 6. (50.1-3929a). Model of a Firedrill.

Drilling fire is regarded as an invention of Old-Man-Coyote's and is mentioned several times in the folk tales, but the use of flint (*birítāre*) is also alluded to.[1]

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[1] Lowie, (f), 18, 27, 28, 234.

Wooden bowls served as plates, as indicated in the folk tales.[1] I never saw any that were so used, but collected a bowl used in a dice game (Fig. 17o) and another made from an elder knot, in which Tobacco seeds had been mixed before the ceremonial planting.[2] In 1910 I observed a number of men who had each a wooden bowl attached to the belt. My interpreter explained that the bowl was their "medicine." I learned also that formerly wooden bowls or cups were carried in this fashion on war parties. When the enemy came, the Crow braves mixed yellow or red paint with water in these cups and painted their own and their horses' faces with the mixture.

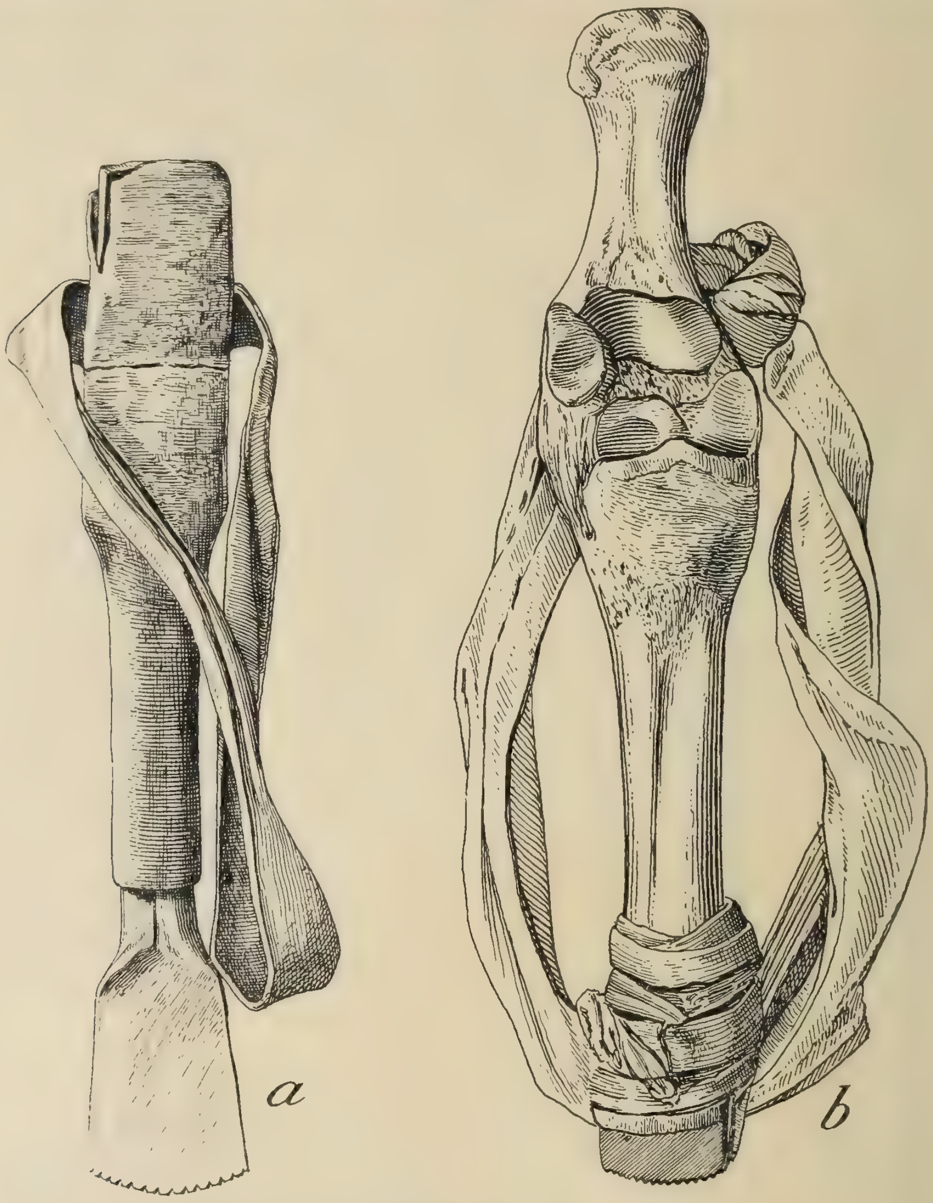

Fig. 7. *ab* (50.1-3904, 3998). Fleshers.

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[1] Lowie, (f), 110, 195.
[2] Lowie, (g), 162.

As Curtis states, the horns of the mountain sheep and buffalo were made into smaller dishes, cups and spoons (Fig. 2). A mountain-sheep horn spoon used in the mixing of Tobacco seed was purchased together with the bowl mentioned above. The use of a horn drinking cup is referred to in one of the folk tales.[1] I once heard of tinder being carried in a hollow buffalo horn.

According to Curtis, " a buffalo paunch was used for carrying water, while the pericardium served as a smaller water-bag." There are several references in the tales to the use of paunches as water bags.[2]

SKIN DRESSING.

First the hide was stretched out and staked to the ground, where it was fleshed with the flesher (*íəxuxpe*). It was dried and pounded with stones. The adze-shaped tool (*bī́k·uə*) served to thin down the flesh side. The worker prepared a mixture of buffalo brains and liver, *isέ* root and sagebrush; this was rubbed into the hide, which was pounded all over and dried. Then hot water was thrown on it and the dresser pounded it again and rubbed it between her hands. Next the hairy side was made to face a fire and the water was struck out with a stick. The side to be tanned was scraped with stones. Next they stretched a sinew rope, and after sewing up any little holes in the skin they laid it over the sinew, rubbing it back and forth, then drying it. This was done three times. After each sinew rubbing the skin was scraped with stones. Then white paint was rubbed over the skin "to make it more dirt-proof," and it was again dried and rubbed against the sinew rope. A light stone scraper was used and finally a knife was taken to cut off the edges where the holes had been cut for staking the hide.

Buffalo hides were not smoked, but those of deer and elk might be. In this case a pit was made in the ground and rotten wood, e.g., of the willow, was used to build a fire in it. Over the hole a small sweatlodge sort of structure was erected and the sewed-up deerskin was laid over it and staked down so that the smoke could not escape. When one side was smoked, the skin was turned inside out. Finally the stitches were taken out and both sides were smoked. Such skins were used for shirts, leggings, and moccasins.

An assortment of the types of skin-dressing tools in the Museum is represented in Fig. 7. Both fleshers have a metal blade, one of them (Fig. 7a) being indeed all iron, while the other (Fig. 7b) has a leg-bone handle. The adze tool (Fig. 9) and stone smoother (Fig. 11) do not present distinctive features, but the use of a beaming tool of the rib type (Fig. 8) merits mention. An iron scraper is shown in Fig. 10.

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[1] Curtis, vol. 4, 21. Lowie, (f), 203.
[2] Curtis, *loc. cit.*; Lowie, (f), 120, 145, 236.

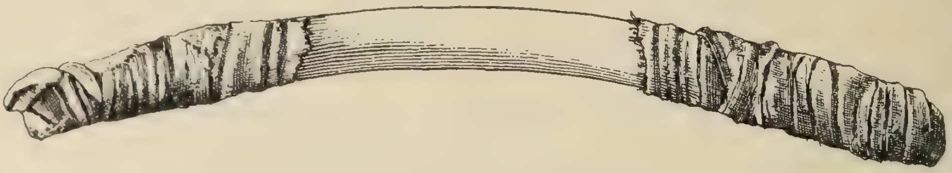

Fig. 8. (50.1-3999). Beaming Tool.

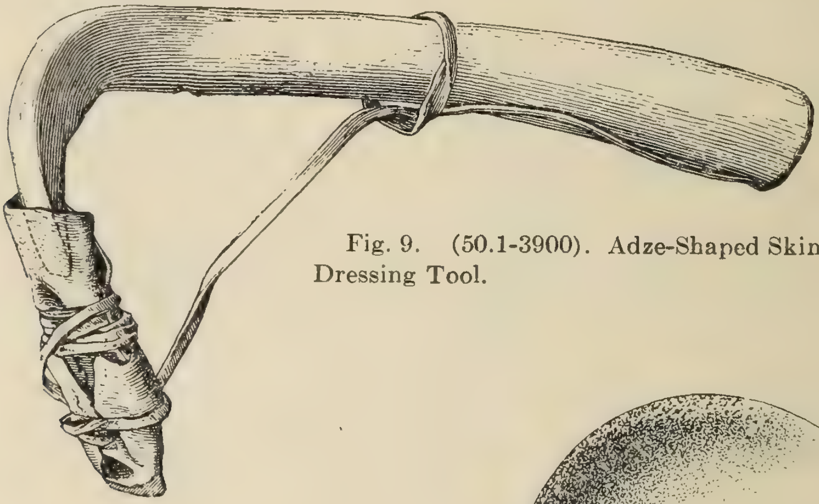

Fig. 9. (50.1-3900). Adze-Shaped Skin Dressing Tool.

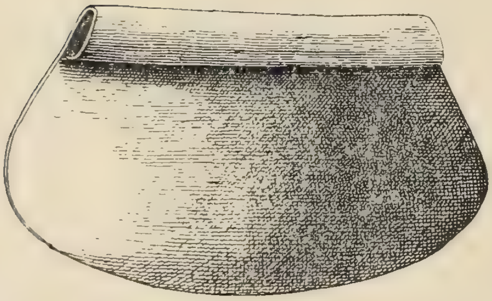

Fig. 10. (50.1-4000). Iron Scraper.

Fig. 11. (50.1-4024). Stone used in Smoothing Skins.

Catlin's description of skin-dressing seems to relate to the Crow method:—

> The usual mode of dressing the buffalo, and other skins, is by immersing them for a few days under a lye from ashes and water, until the hair can be removed; when they are strained upon a frame or upon the ground, with stakes or pins driven through the edges into the earth; where they remain for several days, with the brains of the buffalo or elk spread upon and over them; and at last finished by "graining," as it is termed, by the squaws; who use a sharpened bone, the shoulder-blade or other large bone of the animal, sharpened at the edge, somewhat like an adze; with the edge of which they scrape the fleshy side of the skin; bearing on it with the weight of their bodies, thereby drying and softening the skin, and fitting it for use.
>
> The greater part of these skins, however, go through still another operation afterwards, which gives them a greater value, and renders them much more serviceable—

> that is, the process of smoking. For this, a small hole is dug in the ground, and a fire is built in it with rotten wood, which will produce a great quantity of smoke without much blaze; and several small poles of the proper length stuck in the ground around it, and drawn and fastened together at the top, around which a skin is wrapped in form of a tent, and generally sewed together at the edges to secure the smoke within it; within this the skins to be smoked are placed, and in this condition the tent will stand a day or so, enclosing the heated smoke; and by some chemical process or other, which I do not understand, the skins thus acquire a quality which enables them, after being ever so many times wet, to dry soft and pliant as they were before, which secret I have never yet seen practiced in my own country; and for the lack of which, all of our dressed skins when once wet are, I think, chiefly ruined.[1]

Though Catlin mentions and pictures a frame for stretching the hide (in addition to the pegging to the ground), I do not remember any reference to this method by my informants nor to have seen it in use, but it may well be that occasional use was made of the frame as by the Blackfoot.

Naturally, so important an industry is repeatedly mentioned in the myths; indeed, here and there the processes are rather circumstantially described.[2]

TRANSPORTATION.

On Water. There is no evidence that the Crow used any form of boat, such as the bull-boat of the Upper Missouri tribes. There is a word for boat, *bắce*, and another for paddle, *ī́winaxū̀wə*, but contact with the Hidatsa adequately accounts for the existence of such terms and the reference to a boat in a version of the deluge myth.[3] Nevertheless, the Crow had ways of transporting goods across rivers both with and without the aid of horses, as described by Simms.[4]

In case of a small party with horses three sticks were arranged to form a triangle, or four to make a rectangle, and a hide was spread over and securely fastened to the edges. This raft was then towed by the horses. Larger parties made their frame of parallel tipi poles with the required number of hides over them, the cargo being put on top.

The other method was to place several buffalo hides on top of one another and run a gathering-string round the edge of the lowest one, causing the robes to assume a globular form. The articles to be kept dry were put in with a stone ballast and the skins were towed by means of a line. In shallow water the wading tower pulled the contrivance by hand, otherwise he swam holding the line between his teeth. The latter method was witnessed by Beckwith.[5]

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[1] Catlin, I, 45 f., Pl. 22. Cf. Leonard, 275.

[2] Lowie, (f), 57, 61, 84, 121, 132, 167, 219.

[3] Lowie, (f), 16.

[4] Simms, 191 f.

[5] Bonner, 158.

Travois. Curtis makes the categorical statement that the Crow "never used the travois, either with dogs or with horses."[1] I made inquiries on this subject again and again and obtained widely varying replies. This much seems certain, however, that the travois (*arắk'ō*) was not used with horses except for the removal of wounded or otherwise disabled tribesmen. Leonard, however, speaks of "a sort of dray formed by these poles, which is done by fastening one end to the pack saddle, and the other end dragging on the ground, on which they place their furniture."[2] On the other hand, a number of informants declare that in the old days the travois was employed with dogs. Bear-crane even gave a brief origin account.

> Long ago the Crow had no dogs. Once a little boy went to a pond and saw a dog but did not know what sort of animal it was. He went to some willows and peeled off the bark of the trees for a rope. When he got back, he found two dogs there, a male and a female. He secured them with his rope and led them to camp. Before this the Indians used to pack food on their backs. The boy said to his mother, "Let us keep these dogs for packing things on." The other people did not know what kind of animals these were. The woman did not know how to pack the dogs when they were to move the next day, so her son brought two poles and fixed them on the dogs. All the other people packed on their backs. The dogs had seven pups and their owner gave them to other Indians, so they came to have dogs too.

In both versions of the myth of the Dwarf's Ward a child is represented as strapped to a dog travois.[3]

All informants describing the Crow travois at all spoke of it as having a rectangular frame. Bear-crane makes his boy inventor first cross the poles, then change the method so as to have them almost parallel. Another Indian said the poles did cross.

Warriors going on a raid packed their moccasins directly on the dog's back.

Cradles. The cradle models secured on the Reservation as well as the specimens in the Field Museum, conform to a single variety of a well-marked type. (Fig. 12.) There is a tapering board covered with skin or its equivalent and the pocket is partly covered and tied by means of three pairs of beaded flaps with strings. The general type is shared with the Blackfoot, Nez Percé, Spokane, Shoshoni, and Ute.[4] The absence of the lattice cradle found among the Kiowa, Comanche, and Dakota is noteworthy. Individuality is shown by the Crow in two respects: in the use of beaded flaps with strings instead of simple strings; and in the shape of the board, which, while generally the same as in the tribes mentioned, is decidedly more angular at the top in every specimen that has come under my observation.

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[1] Curtis, vol. 4, 21.

[2] Leonard, 258.

[3] Lowie, (f), 165, 169.

[4] Wissler, (a), 87 f; Lowie, (a), 190; Mason, 187–190. I bought a very large cradle of this type among the Southern Ute of Navaho Springs, Colorado. A Ute frame from southern Utah figured by Mason has a series of parallel rods in place of the board.

When traveling on horseback the mother hung the cradle from the saddle.

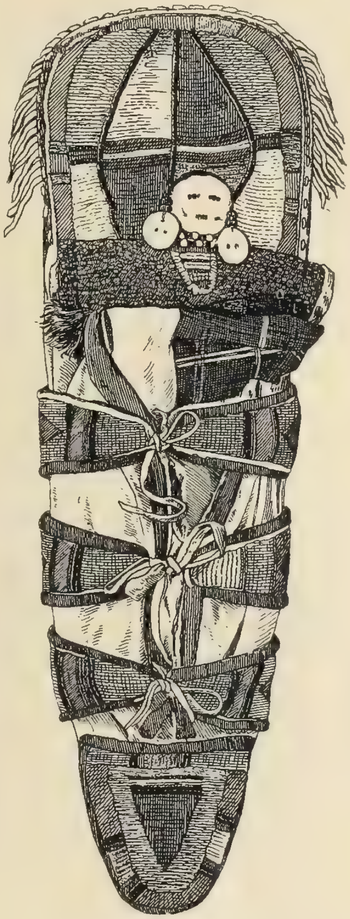

Fig. 12. (50.1-6005*a*). Model of a Cradle.

Dogs and Horses. The Crow kept many dogs in the old days and indeed they still do. Maximilian was impressed with the number and ferocity of those encountered in the Crow camp at Fort Clarke. There were about five or six hundred of them running about, wolf-like in appearance and representing all shades of color; and they savagely attacked the strangers, who were obliged to defend themselves with stones.[1] As the Prince correctly observes, the Crow did not eat dogs. In connection with the modern Hot (=Grass) dance they have doubtless eaten dog, but I learned that even then they sometimes substitute other food.

One old man, possibly legendary, was spoken of as having bred dogs till he had as many as a hundred. Another informant said that the dogs were allowed to breed in their own way. Gelding was an old custom: if they saw a long-limbed dog they would castrate him and use him on the warpath for carrying moccasins.

Some, but not all, dogs had names. The following were cited as examples: *makára-wasàc*, Runs-opposite; *mìcg˙e-cī́re*, Yellow-dog; *mìcg˙etsɛ̀təc*, Wolf-dog. The two last-mentioned appellations were used by my informant to call his dogs in my presence and they came.

In historic times the Crow were famous as equestrians, training their children almost from infancy, and through constant raiding acquired vast numbers of horses. In Maximilian's day the total number was set at from 9,000 to 10,000,—larger than that of any tribe in the region. As to their care in the winter this author writes:—

> Im Winter sollen sie dieselben am Wind-River an einer gewissen Strauchart weiden, eine Nahrung, von welcher sie schnell fett werden.

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[1] Maximilian, I, 396, 398.

The horse-gear did not differ appreciably from that of neighboring tribes. Maximilian noted the use of mountain-lion cloths (*Pantherdecken*), such as are occasionally mentioned in Crow tales, and of elkhorn whips, of which I secured a specimen.[1]

SHELTER.

As among other nomadic Plains tribes, the conical skin covered tent (*acέ́*) was the characteristic dwelling. Skin has of course for many years been replaced with canvas, but in this form the tipi has persisted alongside of modern frame houses. It is most conspicuous at the time of the Fourth of July festivities, on which occasion the Lodge Grass people certainly range their tipis in a circle or ellipse. (Fig. 13.) Curtis regards this as the normal arrangement in olden times.[2] According to my data, the camp circle was not regularly employed by the Crow and there was no definite arrangement of clans within it when it was used. This is confirmed by Maximilian's observation that the Crow lodges were "*ohne regelmässige Ordnung aufgeschlagen.*"[3]

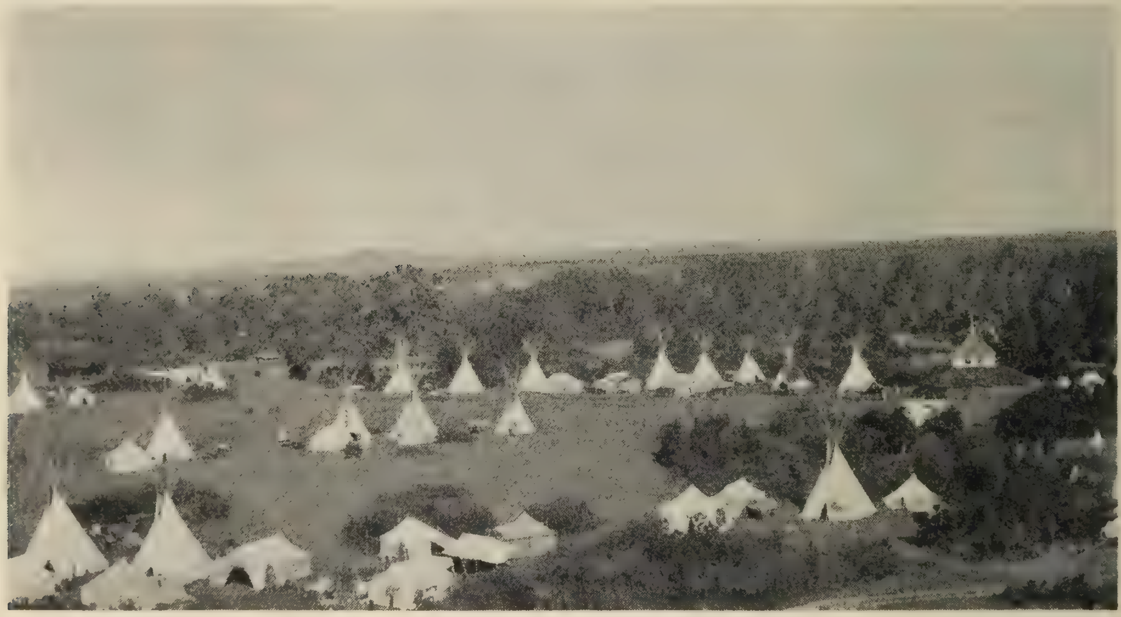

Fig. 13. Crow Camp at Lodge Grass.

Maximilian describes the tents as similar to those of the Dakota, but with pennants of colored cloth instead of scalps on the poles. There is, however, a fundamental difference between the Dakota and the Crow structure, the latter resting on a four-pole foundation while the Dakota use three poles. The difference is important because it divides the Plains Indians into two categories, as shown in the following tabulation, which rests on Dr. Wissler's statement,[1] amplified by G. L. Wilson's on the Arikara, and the result of my own inquiries among the Wind River Shoshoni and Southern Ute (Southwestern Colorado).

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[1] Leonard, 274; Maximilian, I, 395, 398 f.
[2] Curtis, vol. 4, 5.
[3] Maximilian, vol. 1, 396.

Four Poles	*Three Poles*
Blackfoot	Teton Dakota
Sarsi	Assiniboin
Crow	Cheyenne
Hidatsa	Gros Ventre
Shoshoni	Arapaho
Ute	Kiowa
Comanche	Plains-Cree
Omaha	Mandan
	Arikara
	Pawnee

A marked peculiarity of the Crow lodge lies in the height of the poles, which project far beyond the cover. In this respect the difference is marked between Crow and, say, Arapaho lodges; most of the Blackfoot tipis illustrated by McClintock also have noticeably shorter poles than the typical Crow tent.

Catlin describes the Crow tipi as the most beautiful of all Plains Indian lodges. It was 25 feet in height and the framework consisted of from twenty to thirty pine trees brought down from the mountains. A large one figured in his book is said to have accommodated forty men. The skins used for the cover were often dressed as white as linen and decorated with quills and paint.[2]

Curtis was told that before the acquisition of horses the poles were of the lightest kind of fir and that the cover of that period was made of only from eight to ten skins. In a myth cottonwoods appear as temporary makeshifts in place of pines.[3]

According to my informants, the woman who wanted to have a lodge cover made engaged the services of one or more designers (*akasítsk·e*), who directed the work and received four different articles by way of compensation. Other women were invited to assist in the work and were entertained with berry-pudding previously prepared by the owner.

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[1] Wissler, (c), 37.

[2] Catlin, vol. 1, 43 f. Cf. Leonard, 257.

[3] Curtis, vol. 4, 21; Lowie, (f), 262.

This work was undertaken in the fall of every year. For a small tipi only seven or eight buffalo hides were required, while the largest was made of as many as twenty.[1] The dressed hides were put up in a pile and a whole day was spent in preparing the sinew thread. The designer directed the work, showing the other women how to sew. Sometimes as many as twenty women collaborated.

After completion of the cover the lodge was pitched. They burnt sagebrush and weeds inside and when the smoke was seen through the hides they said, "This will keep out the rain," and opened the smoke hole. Then old men were called and the owner's husband smoked for them. They (or the husband himself) counted coups and said, "This will be a very good tipi to make moccasins and bags from in the spring." According to one Indian a social dance was held in the new lodge.

The rear of the lodge, known as *acṓ* or *acṓriə*, is the place of honor. When visiting Rotten-belly's lodge Maximilian found the chief in the rear and was himself bidden to sit down at his left. The portion of the tent immediately on either side of the entrance is called *arṓʻkape*, and the space between it and the *acṓ* is designated by the term *icg·ewatsúə*.[2] The fireplace (*birā́ptuə*) is in the center. The poles are called *ī́riə*, also *barā́tsk·e*, the pair flanking the door *barā́piriə̀*, those outside the cover and used to regulate the smoke hole *asā́racìə*. *Biríə* is the term for the door, *ī́kcī̀we* for the wooden bar lifted in entering. The pins fastening the cover above the door are known as *barā́pite*, the pegs holding down the bottom of the cover as *ī́k·ace*. Bear-crane stated that long ago rocks instead of pegs were used to weight down the bottom of the tipi cover; another informant restricts the practice to the winter season. As among other Plains tribes a draft screen (*bitā́ricìə*) was employed and it was customary to represent the owner's deeds on the screen, not as a rule on the outside of the lodge cover, though this is also said to have occurred. The square "smudge place" behind the fire reported from the Blackfoot[3] does not seem to have been used by the Crow.

Unlike the Hidatsa, the Crow had no bedsteads but slept on several blankets resting on the floor. The place for these on either side was called *mitáse*. Backrests of willows strung with sinew were suspended from tripods and covered with buffalo skins. I have not seen these in use but was able to purchase specimens. As a curiosity I mention the reference to a sort of headrest in the episode of the snakes in the Grandchild myth.[4]

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[1] This number, according to Curtis and one of my informants, was reserved for medicine tents. Normally the maximum number was eighteen and the average is set at fourteen.

[2] Also noted with an initial *a* instead of the *i*.

[3] Wissler, (a), 105.

[4] Lowie, (f), 56, 62, 72.

In the Hidatsa version two log pillows are mentioned, one for the snakes on either side.

In the summer the Crow spend the major portion of the day under a shade erected close to their tipi or modern frame house. This structure has a roof covered with boughs and foliage. It differs from the shade seen among other tribes in having a more or less circular groundplan and a conical instead of a flat roof. An illustration has been published in a previous paper.[1]

A temporary shelter (*actaʽtsé*) is sometimes referred to as being erected, e.g., by visionaries, warriors, and elopers. Men on a war party, according to Blue-bead, erected windbreaks of sticks interlaced with bark and sometimes roofed with foliage.[2]

DRESS AND ADORNMENT.

Men's Clothing. The men's clothing, which was famed for its beauty among early travelers, included the breechclout, leggings extending to the hip, a shirt, the buffalo robe, and moccasins.

The ancient use of the clout is denied by Curtis, who writes that " as late as seventy-five years ago some of the old men had not yet adopted that article of dress." This statement is of great interest because Henry describes the early Blackfoot as lacking this garment, though other information collected by Wissler is contradictory.[3] However, I am inclined to doubt that the Crow ever exposed their genitalia. In the first place, Maximilian saw a large group of Crow Indians otherwise naked covered with the breechcloth (*sämmtlich nackt nur mit dem Breechcloth bedeckt*).[4] Secondly, though I have bathed and sweat-bathed with the Crow I never saw one without the gee-string. Thirdly, in the myths the generic name for Indians is sometimes "Breechcloth-owners" (*bā+iʽtsísat-bicè*), and breechcloths are several times mentioned.[5] It is of course possible that the ancient garment was more in the nature of a skin kilt, such as is known to have been worn by the main performer in the Sun dance.[6]

The normal cut of the Crow shirt has been described by Dr. Wissler on the basis of Museum specimens. He finds that the Crow fall in the same category with the Assiniboin, Blackfoot, Nez Percé, and Northern Shoshoni both in wearing shirts as part of their regular costume and in using "the fringed front or sleeves, with broad decorative bands over the shoulders and on the sleeves."[1]

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[1] Lowie, (d), 39.
[2] Lowie, (f), 152, 177, 261; also (b), 236.
[3] Curtis, vol. 4, 23. Wissler, (a), 118–120, 153.
[4] Maximilian, I, 398.
[5] Lowie, (f), 17, 43, 248.
[6] Lowie, (f), 286; (d), 21.

From Ed Wolf-lies-down I bought a peculiar shirt, which he said had been worn in battle by his father. It has numerous little discs cut out from its body so as to hang from it by the merest thread, so to speak. In a myth a benevolent dwarf is represented as giving to his protegé "a shirt with holes in it," presumably conceived as conforming to this type.[2]

The decoration of moccasins has been dealt with elsewhere. As to their cut, I was told without having asked a leading question that in the old days the sole was not distinct, the entire moccasins being cut from one piece of skin.

The war-bonnet (*ik·úpe*) was only worn on special occasions and conformed to the usual Plains type. Curtis figures Old-dog and On-top wearing fur caps, such as the Blackfoot and their neighbors seem to have worn more commonly than the Crow.[3] I myself secured a cap made from an entire beaver skin and worn as a war medicine; a feather was attached to the head. Normally no headgear was worn. I never saw the rawhide shade reported from the Arapaho, but its occurrence has been noted by Raynolds.[4]

Women's Clothing. The woman's costume included a long skin dress, leggings extending to the knee, and moccasins. Its present equivalent with a modern leather belt is shown in the picture of White-hip's wife (Fig. 14).

Wissler has described and figured the typical dress.[5] He points out that it represents a widespread pattern concept—a sleeveless garment made of an inserted yoke and two pieces for the skirt with cape-like shoulder pieces falling loosely over the arms. The bottom is found to resemble that of Hidatsa, Ute, and Apache dresses.

The woman's dress was richly adorned with elkteeth, a fact repeatedly alluded to; even nowadays imitation teeth of bone are substituted. According to Catlin the dresses were of deer or mountain-goat skins trimmed with ermine skins and extended from chin to feet; the cloth substitutes of today are somewhat shorter.[6]

Except on ceremonial occasions no headdress was worn, though nowadays the women affect a varicolored shawl bought from the trader.

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[1] Wissler, (a), 136; (b), 54.
[2] Lowie, (f), 174.
[3] Curtis, 4, 84, 88.
[4] Raynolds, 46.
[5] Wissler, (b), 64 f., 86.
[6] Lowie, (f), 46, 173; Catlin, vol. 1, 51.

Hair. The only type of brush collected consists of a porcupine tail mounted on a stick. It is also the only one to which I find reference in mythology, but in the tale of Spotted-rabbit the hero is represented as likewise using a buffalo tongue.[1]

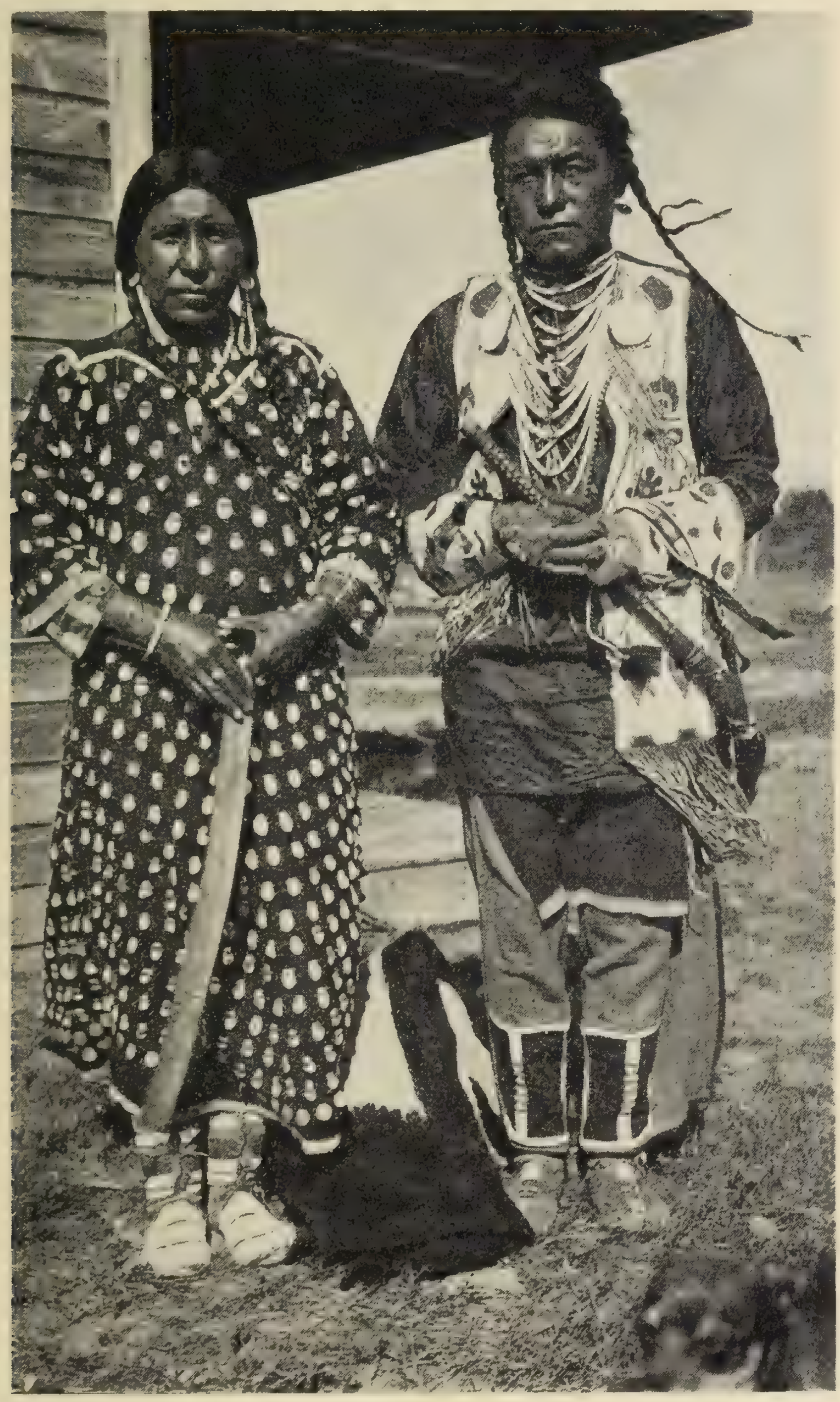

Fig. 14. White-hip and His Wife.

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[1] Lowie, (f), 121, 300; Belden, 122.

In recent times fundamental changes have affected the fashion of dressing the hair. I can find no good description in the older writers, but Maximilian's Atlas presents an instructive picture of the methods used by the men. The fact that almost all the men in his vignette wear feathers in the hair is worth noting incidentally. The fundamental style seems to have been to divide the hair roughly into two halves and to let it flow down loosely in the back and on the sides of the face. This general fashion was, however, sometimes combined with a lock falling down the center of the forehead. One of Maximilian's subjects has the hair coiled in a bulky foretop.[1] What is most significant is the complete absence of braids. This is corroborated by both Curtis' and my own informants, but Curtis evidently assigns too early a date (1830) for the introduction of the later style, since in addition to Maximilian's testimony I have that of my informant, Shell-necklace, according to whom men wore their hair unbraided in his boyhood. On the other hand, this native authority corroborates Curtis' statement that the change was due to Nez Percé influence.[2] Shell-necklace said that the hair was cut even at the bottom and that on the warpath it was gathered and tied in front of each ear. The Crow men lengthened the hair by splicing on switches made from the hair cut off in mourning.[3] In order to keep the unconfined hair from blowing about their eyes, the Crow put little balls of pitch into their hair in belts an inch wide until it was matted together all around their heads. In the early thirties of the last century travelers noted the marvelous length of Chief Longhair's hair, which was estimated at from 9 ft. 11 in. to 10 ft. 7 in. Ordinarily it was wound with a strap and folded into a container some ten inches in length, which the wearer either carried under his arm or within the folds of his robe, only loosening it on festive occasions. Leonard declares that the chief venerated his long hair as his medicine.[4] The "ruler-like" quill-worked strip of rawhide noted by Maximilian as a pendant from the hair of Village Indians seems likewise to have been in vogue among the Crow.

The women did not anciently braid their hair either,[5] but divided it in the center, painting the line of demarcation red; before lying down to sleep they are said to have tied it to prevent entanglement.

As suggested above, the most important difference between old and recent usage lies in the adoption of braiding. This applies to both sexes

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[1] Maximilian, *Atlas*, Vig. XIII.

[2] Curtis, vol. 4, 175.

[3] Curtis, Album with vol. 4, Pls. 136, 138; Belden, 141.

[4] Leonard, 255; Catlin, vol. 1, 49 f.; Maximilian, vol. 1, 400.

[5] Even Boller, whose observations fall between 1858 and 1866, speaks of the Crow women's hair "falling free and unconfined over their shoulders." (Boller, 326.)

The women still divide the hair in the middle and paint the parting-line, but in addition there is a thick braid on each side. With the men there is some variation. In 1910 a very popular style was to have a queue in the back with a pair of queues in front, one hanging down over, in front of, or just behind each ear. Crane-bear then had his hair parted in the middle, with a little braid on the right of the dividing-line but without the usual lateral ear braids, his hair being unconfined in front while in the back there was one long, thick queue. Many young men still wore switches secured above the rear queue and often provided with two elk teeth near the place of attachment. The young dandies affected a thin lock passed through a narrow brass tube somewhat toward the center of the body from each lateral queue. The central bang or pompadour is also characteristic of modern times.[1]

Catlin speaks of the hair being oiled every morning with bear's grease. According to Curtis, both sexes perfumed it with castor and sweet-smelling herbs and rubbed it glossy with cactus pith.

Tattooing. Arm-round-the-neck said that the Crow occasionally tattooed themselves, but not on one-half of their body in the Hidatsa style. He said he had seen some tattooed men; some had the marking on their arms. The women tattooed a circle on the forehead, a dot on the middle of the nose, also a line from the lips down to the chin. Besides the Hidatsa my informant knew of the Assiniboin as a tattooing people.

It may be worth noting that one of the two chiefs mentioned in a legendary account of the Crow-Hidatsa separation is named, Has-a-tattooed-face[2] (*ís-aràpi-wicè*).

Curtis learned that tattooing was not general, only some men having a symbol of their medicine pricked in their breast.

> In tattooing, four or five porcupine quills, held with the points almost touching, were pricked into the skin, then powdered charcoal of red willow and pine was rubbed in.

The women, he tells us, had a narrow perpendicular line on the lower lip and chin and a small circle on the forehead.[3]

Various Ornaments. A great variety of ornaments served decorative purposes. Maximilian figures a Crow wearing a bear-claw necklace and Curtis states that necklaces were also made from circular pieces cut from the bleached shoulder-blade of a buffalo, polished, and smeared with white clay. Shell ear-rings (*iəxbúəte*) are mentioned in describing the appearance of prominent men,[1] and according to Curtis the women wore ear-pendants of circular pieces of buffalo bone. In modern times a neck and breast ornament of many chains of bone discs is very popular with the men. Ornamental tomahawks are carried in the hand for show and the same applies at least in part to big eagle-feather fans. The modes of dressing up for special occasions have been noted in the accounts of ceremonies and societies.

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[1] For the pompadour see *Handbook*, art. Crow, and Spotted-rabbit's picture in Curtis, vol. 4, 108.

[2] Lowie, (f), 272.

[3] Curtis, vol. 4, 175.

WEAPONS.

Arrows were made by especially skilled workers. When the points and feathers had been got together, a big feast was prepared by the man who wanted arrows made and the experts invited came and ate. After dinner the sticks were distributed and each took his and fashioned it into an arrow, which was given to the host for inspection. Two kinds of arrow-straightener are described, one of horn, the other a pair of grooved stones. The former was made from the horn of the female mountain-goat with four holes of successively larger size bored into it to accommodate shafts of varying bore. This instrument is said to have left a mark on the wood that was effaced by rubbing the arrow between two grooved stones about three inches in width. In the Field Museum I noted a bone-straightener with three circular holes. On the shaft of the arrow the craftsman traced a zigzag line by running a sharp iron point along the surface while slightly shaking the arrow.

Well-made arrows were highly prized, so that when a man receiving some dessert from his sister acknowledged the courtesy by sending back ten arrows to her husband the gift was deemed equivalent to that of a horse.

Bows were either simple or sinew-backed, but according to Gray-bull the former were used exclusively by boys. In the Field Museum there are several hickory bows wrapped with cloth in the middle as a substitute for buckskin and also one of ash wood. In the tales I find references to elkhorn and sinew-backed cedar bows.[2] My informant mentioned the red cedar (*muru'pé*) as furnishing the material. Under the ends of a wooden bow the craftsman tied some object and raised the extremities so as to give them the required bend. Catlin described bows of both bone and mountain-sheep horn; he gives three feet as about the standard length of all Crow and Blackfoot bows.[3] Gray-bull spoke of elkhorn bows but added that for the most part they were obtained from the Shoshoni. It is interesting that Maximilian speaks of horn bows as importations among the Blackfoot.[1] The makers took the antlers of an elk that had been recently killed, and heated them till they were soft so they could be easily cut off. Some split the piece in the middle, others did not.

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[1] *E.g.*, see this series, vol. 11, 216.
[2] Lowie, (f), 123, 151.
[3] Catlin, vol. 1, 32.

Belden speaks of the elkhorn bows of the Crow as their typical form of the weapon and furnishes this description:—

> . . . . they take a large horn or prong, and saw a slice off each side of it; these slices are then filed or rubbed down until the flat sides fit nicely together, when they are glued and wrapped at the ends. Four slices make a bow, it being jointed. Another piece of horn is laid on the center of the bow at the grasp, where it is glued fast. The whole is then filed down until it is perfectly proportioned, when the white bone is ornamented, carved, and painted. Nothing can exceed the beauty of these bows, and it takes an Indian about three months to make one.[2]

Beckwourth[3] is likewise enthusiastic about these bows:—

> The horns are thrown into hot springs which abound in that region, where they are kept until they are perfectly mallable (*sic*); they are then taken out and straightened, and cut into strips of suitable width. It takes two buffalo horns to make a bow of sufficient length. They are pieced in the center, and riveted; then they are bound strongly at the splice with sinew. Bows made of this material are equaled by none other except those made from the horn of the mountain sheep.

In order to glue on the sinew for the back of the bow the maker took the eyes, breast, and penis of a buffalo, cut them into small pieces and boiled them in a kettle; the outer hide of a beaver's tail was also put in. Another time buffalo gristle (*arātsī́se*) was said to have been boiled for two or three days. The sinews were taken from the shoulder-blade of a buffalo and softened, being wrapped round a white stick, then removed and placed into sand. Then the sinew is dipped into the cooled glue and little cross-markings that have been made on the back of the bow are filled up with glue. One layer of sinew is then placed on top of another antler back of the bow.

The bowstring was made of dried sinew. At both extremities there was a wrapping to prevent the string from slipping. The wristguard was made of buffalo rawhide.

As in the case of arrows, the manufacture of bows was left to especially able individuals. In recent times Hunts-to-die (*aracɛ́-tsī́ric*) was a distinguished craftsman for both arrows and bows. I do not know whether this combination was general.

Gray-bull spoke of quivers made from three otterskins sewed together. Two specimens in the Field Museum are of sheepskin and buffalo calfskin respectively. Maximilian writes:—

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[1] Maximilian, vol. 1, 580.
[2] Belden, 112.
[3] Beckwourth, 285 f.

Die Männer arbeiten die Waffen vorzüglich gut and zierlich, besonders die starken Bogen mit dem Horn des Bighorn oder Elkhirsches überlegt, auch oft mit der Haut einer Klapperschlange überzogen. Einen schönen Köcher dieses Volkes, mit Rosetten von Stachelschweinstacheln, habe ich (Tab. XLVIII, Fig. 10) abbilden lassen.[1]

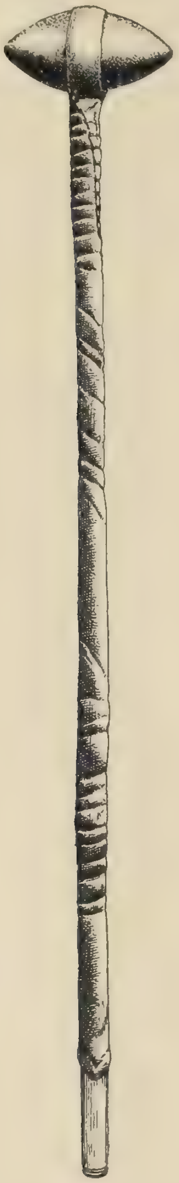

Fig. 15. (50.1-717). Warclub.

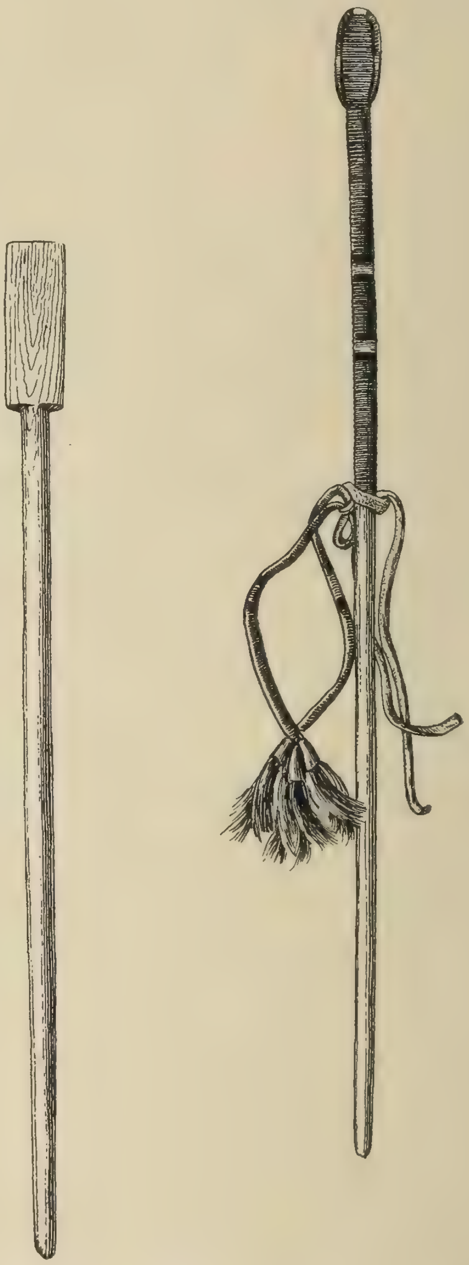

Fig. 16. (50-6836c, 6835d). Pipe Stokers.

Maximilian's wording suggests that there were genuinely complex bows of wood strengthened with bighorn and elk antler rather than bows of this material altogether. The snakeskin covering is reported from the Gros Ventre and Indians west of the Rockies.[2]

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[1] Maximilian, vol. 1, 400.
[2] Kroeber, (b), 151; Wissler, (a), 160.

In striking coups the Crow sometimes availed themselves of a device called *ictáxiə hátskite* (long bow; also *maráxiə hátskite*). I secured an indifferent model, but better specimens are exhibited in the Field Museum. Each consists of two long slender sticks wrapped spirally with red and black cloth respectively and united at intervals with quill-covered buckskin strings. Six feather pendants are said to represent three Dakota and three Cheyenne killed by the owner.

Gray-bull said that the wood was either ash or birch (?), his model being of the former; that the feathers were formerly seven in number, all of them eagle wing feathers dyed red; and that the red flannel was substituted for deerskin. At the end of one of the sticks there was a piece of metal, so that it could be used as a spear at close quarters. Yellow paint or white clay was smeared on the wood according to a man's visions, and the same applied to the character of the wrappings. A man eloping with the wife of another would give her a coup stick to hold.

Spears (*icg˙akéo*) are mentioned in accounts of both fights and ceremonial activities. Maximilian figures a mounted Crow holding a spear, and the robe illustrated in the paper on Art likewise shows warriors carrying this weapon.

The Museum has two specimens of the familiar egg-shaped warclub (Fig. 15). A much heavier stone club with similar hafting was evidently used ceremonially, since the stone is largely covered with strips of quill-wrapped rawhide and appendages of tin cones with feathers or dyed hair.

The Crow used the circular buffalo hide shield characteristic of the Plains Indians. Owing to its religious associations it has been fully dealt with in a previous publication.[1]

PIPES AND SMOKING.

Shell-necklace says that the Crow never made any pipes themselves, but obtained theirs from the Dakota and Hidatsa. This is confirmed by Old-dog so far as redstone bowls are concerned. In this connection it is worth noting that when Maximilian visited the chief, Rotten-belly, a Dakota pipe was passed round for smoking.[2] However, Old-dog also refers to the former use of tubular soapstone pipes, of wild rose bush (*maráxaxè*) stems, and of gun-barrels. Grandmother's-knife said that while the Shoshoni and Arapaho used pipes of black stone he could not remember any but catlinite pipes among the Crow. Still another informant said that small pipes were obtained from the Nez Percé and that the Crow never made pipes. This latter statement he qualified by saying that a piece of red stone was bought from the Dakota by a Crow Indian, who subsequently made some pipes therefrom.

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[1] Lowie, (h).

[2] Maximilian, vol. 1, 398.

For cleaning the pipe bowl a stick of *ī́ptsiʻtsixaxè* (pipe + ?) wood was used. The same kind of wood was made to serve as the point of firedrills and to mount porcupine tails for brushes. The two available stokers, however (Fig. 16), are made of a different kind of wood.

It is interesting to recall that even in Maximilian's day a tribe so far to the west as the Blackfoot had secured in trade the highly prized Dakota pipes, though in addition they had steatite and blackstone pipes.[1]

As I have pointed out in a previous publication,[2] the Crow did not smoke their own sacred tobacco plant but only that of the Hidatsa, which differed specifically from it. Old-dog had heard of the ancients smoking "deer-tobacco" (*ū́*^{u}*x ṓpe*), but he did not know what it was like. For lack of tobacco, he said, the Indians smoked willow bark; the red willow was only used in recent times. Formerly the tobacco of the traders was mixed with *ṓpicè*, a weed or vine growing in the mountains, or with the bark of the wild rose (*maráxaxé*). Belden says that *ṓpicè* ("called O-pe-sha by the Indians, and Lambre by the Whites") was mixed with an equal quantity of tobacco. He describes it as a green leaf growing on a running vine above the perpetual snow line.

> The vine runs on the ground, has a pear-shaped leaf, and resembles the pig-weed of the north. It is an evergreen, blossoming in the winter, on beds of snow, and bears bright red berries, of the size of a pea. The berries are sour, very hard, and always retain their color.[3]

I do not remember seeing Crow women smoke. According to Wissler, Blackfoot women smoke from small pipes of somewhat specialized type. I have very definite recollections of Cree women with little pipes in the corner of the mouth. The practice may thus have a distinctly northwestern distribution so far as the Plains are concerned.

AMUSEMENTS.

The Crow had a considerable variety of amusements, even apart from the social dances, which are considered elsewhere. The games to which I find specific reference in the mythology are the hand-game, hoop-rolling, plum-seed dice, shinny, and football.[4]

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[1] Maximilian, vol. 1, 569.
[2] Lowie, (g), 112.
[3] Belden, 132 f.
[4] Lowie, (f), 31, 53, 58, 88, 111, 119, 154, 163, 200.

Hand-Game. This is known as *bā́xuə-(h)irùə,* hiding making, but this is also interpreted as "soul-making." It is perhaps the gambling game *par excellence* and medicine was made to ensure success. Robes and other valuables were wagered freely. There are traditions of men who lost all their possessions in this game and went out to fast and wail, obtained a vision and then recovered all they had lost. One of these men was nicknamed Chews-the-hiding-game (*bā́xuə hiné'tsic*) because while singing during a game he had a queer way of opening and closing his mouth. After his revelation he put white paint over his forehead and then beat all his opponents. Red-clothes (*axúə-ícicēc*) also lost all his property at the game, went out for a vision, and was adopted by a hawk. Thereafter it was hard to beat him.

Messiter, cited by Culin, speaks of a shell as the object concealed under a buffalo robe, where it is changed from one hand to the other.[1] My informants mention elkteeth,[2] or two differently marked bones, or more recently bones with strings. I bought two spindle-shaped bone objects, one with string round the middle. There were ten tally sticks, and when all had been taken by one side the game was over. Whenever a guesser (*aktsiwé,* the one who tells) failed, he had to surrender one counter. Two persons hid the teeth and one guesser represented the opposite side. There was a conventional way of indicating a guess. A right-handed person would strike his heart with his right hand and point, a left-handed guesser would use his left hand. If the guesser wished to indicate that the teeth were in the right hand of the person facing him on his left and in the left of the one facing him on his right hand he would extend his thumb and index while flexing his other fingers. This guess was known as *ása'ka rū́pdək,* outside two, since the teeth were supposed to be in the two outside hands from the guesser's position. If the teeth are supposed to be concealed in the two inside hands, i.e., in the right-hand person's (from the guesser's position) right hand and the left-hand person's left, the guesser moves his hand downward with the four fingers extended. This guess is called *k'úonēk,* the middle. If both hiders are supposed to hold the teeth in the hands nearer the door, thumb and index move in that direction and the guess is termed *birī́əc-dēk,* he went to the door. Contrariwise thumb and index move in the opposite direction and the guess is called *acúc-dēk*˙, he went to the lodge.

Gray-bull says that both men and women played this game, but each sex by itself. Originally there were only four or five players on each side, but in later times the Lumpwoods and Foxes were pitted against each other. Each society first met in its own tent, then they got together in a large lodge prepared for the purpose. They sat on opposite sides, each group in several rows. Robes, beadwork, and war-bonnets were laid down as stakes. When the amount wagered by both sides was equal, two men took seats in the rear; it was their business to keep the pipes going. Their function was to work magic for their respective societies. All sang songs. Each side had two elkteeth, which were hidden at the same time while the singing was going on. Drums were beaten. Each society was represented by a player. The first guesser would strike his breast hard with one hand, at the same time extending his other arm. Each player appealed to his medicine: they would paw the ground like a horse, snort like a bear, flap their arms like a bird, hiss like a snake,—all according to their medicines. A wrong guess was jeered. In this formal game it was incumbent on the guesser to indicate his guess at the other player's second movement. Each man had had three tally sticks, of which one had to be surrendered at each wrong guess. The game was lost with the three counters. Then the winners beat drums and sang victory songs, mocking their opponents. They would give their tally sticks to a famous chief, who held them up and recited a coup for each counter. Throughout the performance the two men in the rear continued making medicine. A blind man was reported to be the best guesser, provided he knew the voice of his opponent.

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[1] Culin, 317.
[2] Lowie, (f), 26.

In addition to the myth already published revolving about a hand-game between opposing groups of animals[1] a very brief statement was secured to the effect that Old-Man-Coyote once assembled all the winged and unwinged creatures and made them play at the hand-game, helping each group alternately. They played all night. In the morning the birds finally won. Magpie went up, raised his wing and got the first light on it, hence his wing is white.

Dice. Under this heading two categories may be distinguished, the plum seed game and the stick dice, the former being called *burúʻpirùə* (from *buruʻpé*, plum), the latter *baré-cõpe* (sticks four).[2] Both are played by women and are indeed emphatically regarded as associated with the female sex. When I tried to get Gray-bull's wife to explain the method of counting throws, her husband grew very impatient, finally exclaiming that it was a woman's game, that the women always went off by themselves in playing it, and that it was useless for me to try to understand the game since he himself failed to understand it though living with Crow women all his life.

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[1] Lowie, (f), 26.
[2] Culin, 177–178.

The playing of the seed game was thus described in the Reno district. Two women play against an equal number. Both sides lay wagers. There are ten tally sticks, which are placed in the middle. Five seeds, differently marked, are placed in a wooden bowl resting on a robe. The player strikes the robe with the bowl, causing the dice to fly up. Each combination counts differently. A player in bad luck will turn to a friend and say, " I am not lucky, wash them for me." Her friend rubs the dice between her palms and returns them.

According to a Lodge Grass informant, the number of counters used by each player is twelve and it takes six dice to make a set. In place of seeds bone dice are frequently used, and it was with such a set, made up of three circular and three triangular dice, that the method of counting was explained to me. Mr. Culin also puts the number of dice at six. With the set referred to above the scoring was explained as follows. If all the dice turn up either marked or plain, the throw counts 6. Three marked discs and two marked triangles score 1; one marked disc and one marked triangle, 4; one marked disc, 2; three marked discs, 3; two marked discs and one triangle, 3.

Another authority said that usually only five dice are thrown, but when a player has made a "hole" (*hupík·*) she has the privilege of adding a sixth. The quintet is composed of two pairs and an odd die. The "hole" is scored when all the five dice fall with their faces down, which counts 2. The same score holds when the pairs fall face up while the odd die is down, but I do not know whether this also is considered a "hole." When one pair falls up, the other down, the odd die up, the score is 3. The "white" throw (*tsíək* or *tsíəhik·*) is made when six dice are thrown and all fall the same way; it counts 6 in either case. When only five dice are used and all fall the same way, it counts 1. When all the five dice turn up except for one of the paired ones, the throw counts 1. If one pair turns up while the other three are down, it counts 7, but apparently only if this is done at the third throw. Under special circumstances six dice up count 10, i.e., "when the tallies are in symmetrical position," which possibly means when opponents have an equal number of tally sticks.

Still another informant refers to the use of a pair of buttons, a pair of bones, and an odd elktooth. If the buttons were up and the three other dice down, the player was said to score 3; and the score was the same when the buttons were down and the rest of the dice up. If the elktooth fell up unmarked and one button unmarked, the score was 0. Five marked dice were said to score 5; one button up and the rest down, 1; one bone up and the rest down, 2.

According to Culin, the Crow dice closely resemble those of the Wyoming Shoshoni. I purchased a considerable number of sets, varying widely in shape, size, and decoration (Fig. 17). The bone dice are lozenge-shaped, triangular, rectangular, circular, and elliptical, the last-mentioned variety having a concavity on the marked side. My counters are cylindrical sticks about 3½ inches in length. Culin mentions dice of wood and such alien materials as blue china, which I also recall seeing on the Reservation.

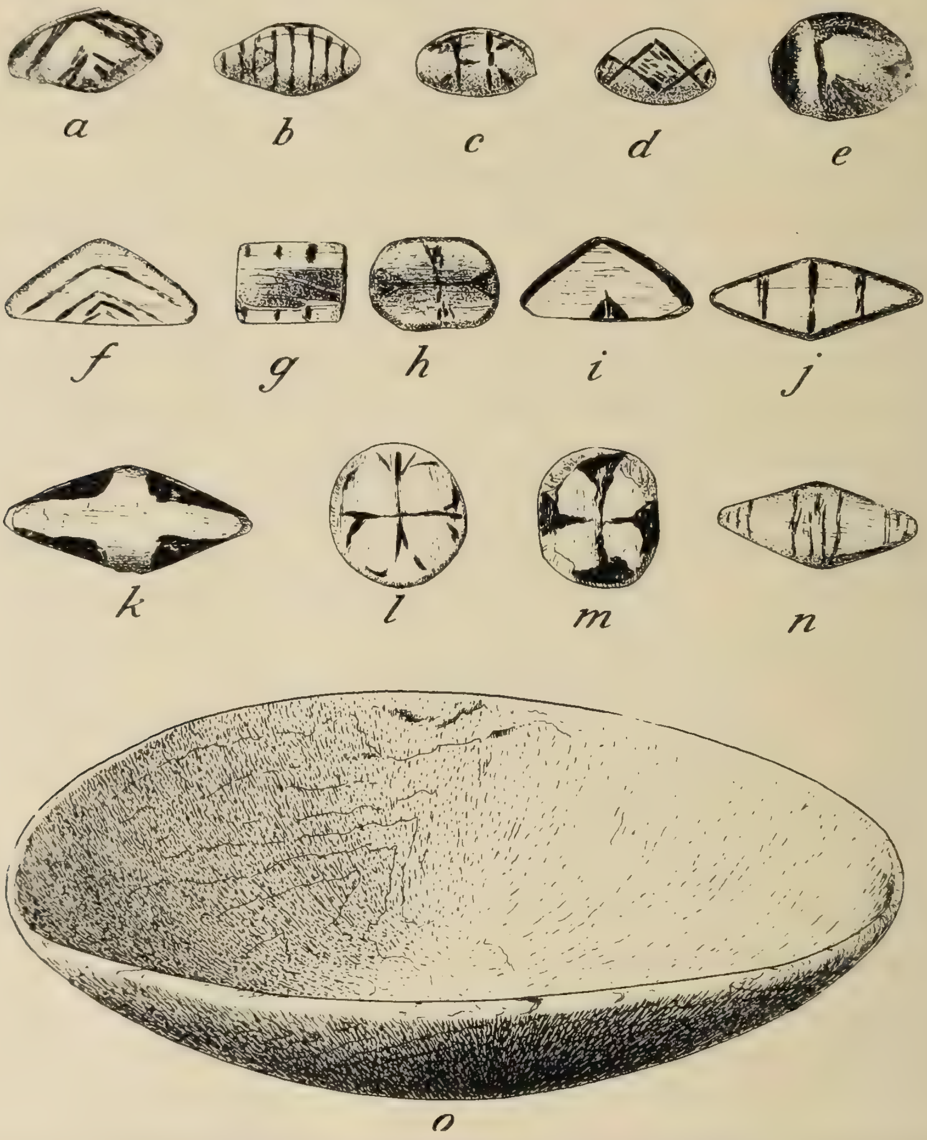

Fig. 17. *a-n* (50.1-3980, 3964, 3966). *o* (50.1-3925). *a-n*, Plum Seed Dice; *o*, Bowl used with Dice.

In a typical set three discs are marked on one side with a cross in faded brown, while three lozenges have transverse lines of the same color.

A central cross expanding into an isosceles triangle from each point seems a fairly common design.

The use of a bowl (Fig. 17o) may prove significant since baskets seem to be far more common in the Plains area.

About the stick-dice, also a women's game, I learned that they were thrown on a flat stone in the middle of a circular piece of tanned hide marked with a circle in white. I collected a considerable number of sets, generally of eight, more rarely of four dice each. Mr. Simms's sets, however, all came in fours. In each of his sets two sticks are distinguished by burnt marks on both sides; the length of his dice varies from 6 to 11½ inches, while mine are from a little over 7 inches to a foot in length. It is only the very widest sticks that are ½ inch in width; ¼ inch is much closer to my average.

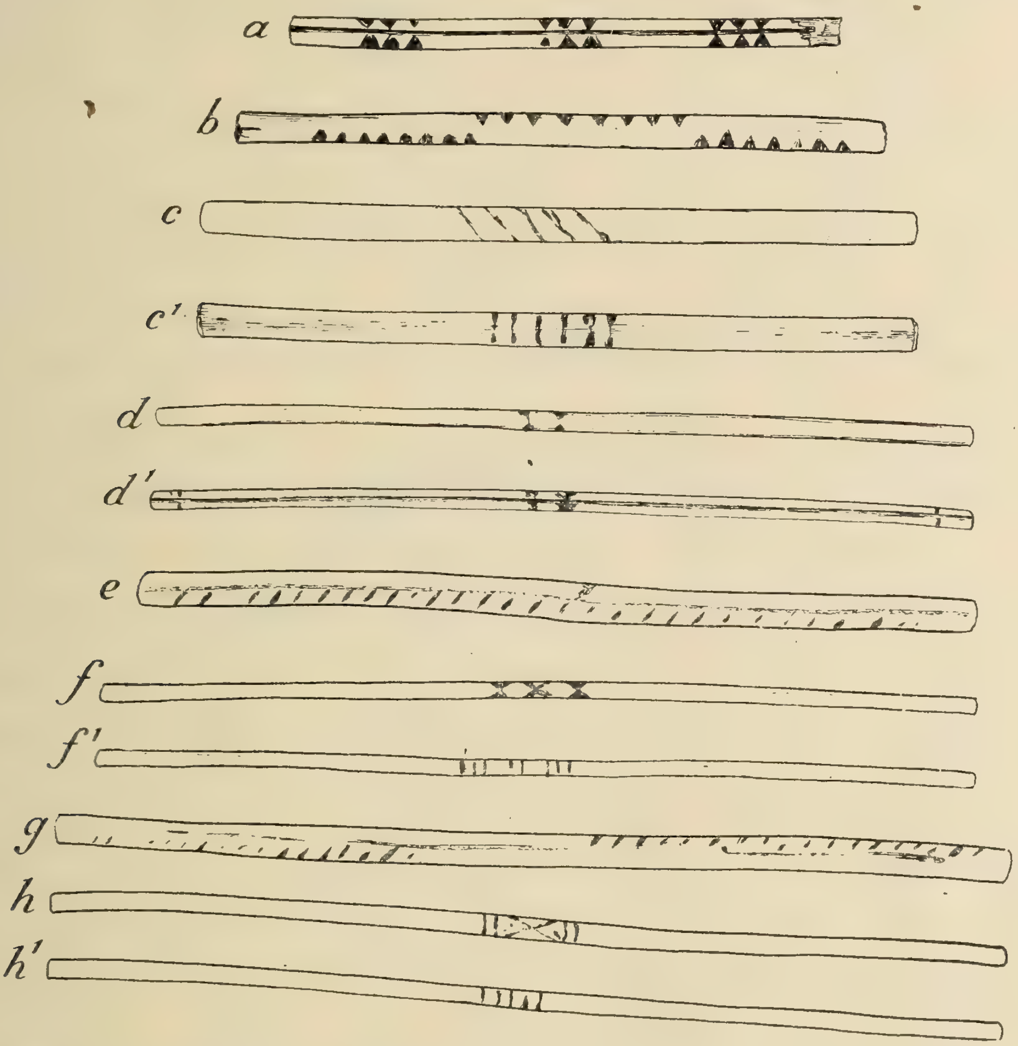

Fig. 18. *a-h′* (50.1-3970, 50-3973, 50.1-4297, 3972, 3971, 3974, 3969). Stick Dice.

Two types of sticks may be distinguished, grooved and ungrooved. The latter are quite flat on one side and generally have a very slight convexity on the other. In some of the ungrooved specimens, however, a longitudinal central line, marked with greater and lesser definiteness in different pieces, and indeed at different spots on the same specimen, suggest the beginning of a groove. Both grooved and ungrooved dice bear burnt decorations. These vary a good deal. Sometimes, but by no means always, a stick is marked on both sides, but in such instances the designs are different on the two sides. Transverse parallel lines are common. There are also parallel oblique lines, series of small triangles more or less symmetrically disposed with reference to the groove, and other patterns, of which a fair sample is offered in Fig. 18.

One informant said that a complete set comprised four red and four blue sticks. In each quartette there is one stick with two markings, which score nine (*həwátəxpe*). A stick marked with the representation of a gun or of a little man counts ten (*pirikė́*). Dresses, elkteeth, and quilts were wagered on the outcome of a game. Players were permitted to get outsiders to throw for them.

According to one statement[1], the women got distinguished warriors to paint their stick-dice with pictures of men or horsetracks.

Hoop and Pole Game. This is called *batsī́kisùə*, mock-hunting. This recalls one of the Dakota terms for the game, which is translated "shooting the buffalo," and the Cheyenne designation of "buffalo game." Another Crow term is *bā́*^{a}*xarɛʻk·uə* (throwing the hoop), or *bā́xa-ritùə-déʻk·uə* (hitting and throwing the hoop), *bā́*^{a}*xa* (*mā́*^{a}*xa*) being the word for hoop. The dart is known as *íriə*.

The hoop evidently differed considerably in size and appearance. I collected two distinct types,—one a plain bark-wrapped ring, not quite circular, with diameters of 9¼ and 10 inches, respectively (Fig. 19a), the other a netted wheel about a foot in diameter (Fig. 19b). The latter is somewhat larger than the one collected by Mr. Simms and differs in having a circular, not a rectangular, central opening, agreeing in this respect with a Piegan hoop figured by Culin. One informant, doubtless referring to the plain ring, said it was made as small as possible in order to make the game more difficult; another set its diameter at five inches. As a matter of fact Culin pictures an iron hoop of only 2½ inches. This represents a third type, since it is profusely decorated with colored glass beads affixed to the inside: I also heard of yellow and blue rings attached for decoration.[2]

The darts also varied. Two specimens collected by Mr. Simms with the netted wheel are trident saplings 44½ and 57 inches in length. A

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[1] Culin, 441, 504.

[2] Culin, 502.

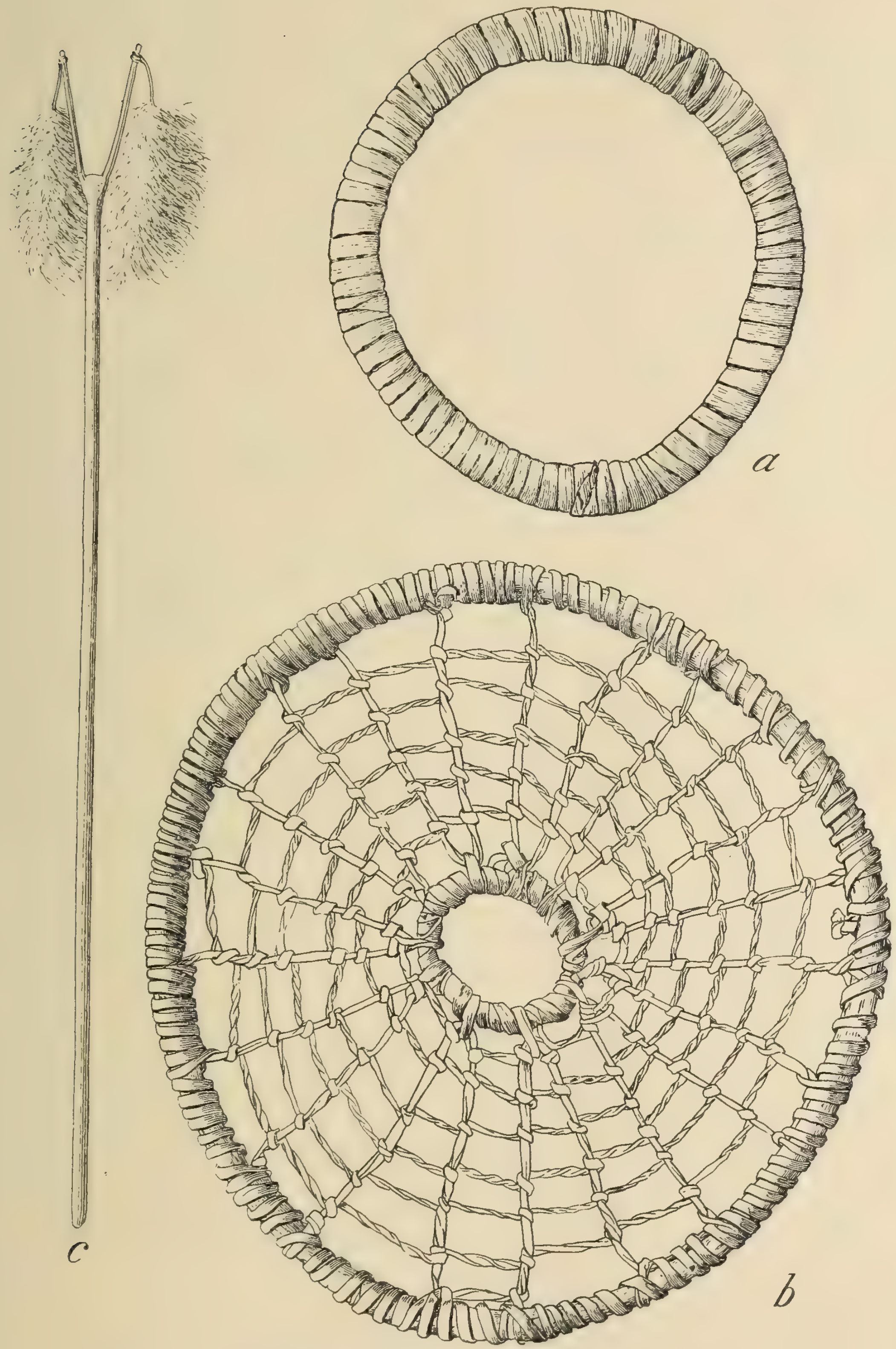

Fig. 19. *a-c* (50.2-165, 164b, 164a). *a, b* Ring and Hoop; c, Dart.

model I bought with the same type of hoop is only about 42 inches long, has two prongs, and attached to each is a plume (Fig. 19c). Another type described by an informant and presumably for the other forms of hoop, was 4 feet in length and of the thickness of a finger, and in recent times was provided with an iron tip. The shaft was wrapped with sinew and buckskin alternately, the latter being especially heavy in the center. Buffalo hair was tied to one end, and to make the dart slippery it was smeared with white clay. Little-rump said the stick had four buckskin wrappings at different spots on the shaft; to one end was attached the bushy part of a buffalo tail, to the other a (piece of?) buffalo horn. Before throwing this javelin, they rubbed mud all over it.

According to the same informant, the game was played on level ground with two score-keepers who used small willow sticks as counters. The two players used one ring. When it was thrown on the ground, both hurled their darts at it while it was rolling. The one who came nearest to the hoop scored. According to other data, the dart was to go through the hoop or, in case of a netted ring, through the central hole (*kúənōpe*). There was gambling on the result. Sometimes when there was no betting the winners pursued their opponents and struck the rear man on the back with the hoop.

Another way was for one man to roll the hoop and the other to throw at it. Then the dart was stuck into the ground where the hoop fell down and the other player shot at it with bow and arrows, losing all the arrows that missed their aim. In this game several young men seem to have been on each side. In the Reno district I was told that the hoop, if not touched, is rolled back and forth until one of the players hits it. Then he raises the dart, but in order to score he must lift it so that the hoop does not fall off.

Gray-bull described the netted hoop as about 4 inches in diameter and wrapped with buckskin. The netting consisted of three horizontal and three vertical cords, and beads were attached in the intervening spaces. The darts were long willow sticks with a wrapped elkhorn tip at one end and a buffalo tail at the other; at every three or four inches there was a wrapping of buckskin round the dart. The ground for rolling the hoop was leveled and at the end of the path logs were placed, with dirt on either side. The first player (only he?) had his body painted red and wore nothing but a breechclout. Both players ran with the rolling hoop and threw the dart as it got to the logs. It was essential for a score that one of the beads of the hoop should touch the wrapping of the dart. Gray-bull makes it appear that while in any one inning there were only two players these really represented two opposing sides and were relieved by their associates in subsequent innings.

On another occasion Gray-bull said that each side had six tally sticks and surrendered one for each mesh struck by their opponents. Sometimes one group of players would have a single counter left, but if they then succeeded in striking the center or the edges (*saxtaré*), they won all the same.

Both among the Arapaho and the Gros Ventre Professor Kroeber found that the netted hoop was restricted to boys. Among the former adult players used a plain ring with a pair of joined darts; the Gros Ventre men substituted an equivalent of the third Crow type, with beads or other decorative objects attached to the inside. Incidentally, the latter form, according to Culin, also occurs among the Piegan.[1]

Snow-snake. Another amusement consisted in peeling a young willow and twisting the bark round it. This was held over a fire, yielding when the bark was removed an alternation of blackened and white spaces. In the latter property marks were made in red. Then the sticks were thrown for distance, the winner taking his opponent's sticks. The stick was hurled so as to touch the earth and then fly up. Each player had ten or fifteen darts. Once Dave Stewart won as many as 150 of them. When a boy had thus won many sticks, poor boys would come and pick them up for him; then he would take only the longest ones for himself, dropping the rest for the poor boys. A stingy lad would pick up the sticks for himself.

Two informants who described the foregoing pastime regarded it as a variant of Mr. Culin's third type of the snow-snake game, which is called *ãc-xarúci-rϵ'k'ùə*, sending the horn running. According to my informant, a buffalo horn tip was fixed to the end of a peeled cherry stick. The horn was heated and greased so that it should slide with ease. The players wagered so many arrows, then swung the dart in the air with the horn end forward, struck the ground with it and made it fly into the air to a great distance. The one who threw his stick farthest won. Some boys who had bet their best horned sticks would not give them up on losing, but ran away. Mr. Culin figures a Crow javelin of this type collected by Mr. Simms, "a thin sapling, painted red and tipped with horn"; the length is given as 32½ inches. "The stick is seized by the end, whirled rapidly with a vertical motion, and released when it gains momentum."

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[1] Kroeber, (a), 382–386; (b), 186–188.

Mr. Culin's second type of snow-snake, a genuine ice game, also occurs among the Crow.[1] Mr. Simms collected a dart 29 inches in (total) length. It consists of a piece of beef rib, painted red and incised with crossed lines, and two long twigs inserted at the squared end. Feathers dyed red are attached to the ends of the twigs.

Shinny. The Crow name for this game is *bū́ptsa-ritùə*, ball-hitting. According to Simms[2] men and women play on opposite sides, but one of my informants mentions instances of husbands playing with their wives, and more particularly speaks of the Night Hot Dancers with their wives being pitted against the Big Ear Holes and *their* wives; in former times the place of these modern clubs is said to have been taken by the Foxes and Lumpwoods. Nevertheless, it seems that the game is more particularly associated with women: when an old woman in the Grandson myth desires to determine the sex of an intruding child she deposits in her garden a bow and arrows as a boy's toy and a ball and shinny stick as a girl's.[3] It is, however, conceivable that my interpreter was at fault and that the reference is to the double-ball game which is everywhere restricted to the female sex.

This is a spring game. The goals consisted of two blankets (Simms) or piles of blankets laid down side by side. At the start the ball is tossed into the air and players were expected to drive the ball to the appropriate goal. The ball collected by Simms was a flattened spheroid, four inches in diameter, with a median seam; the stick was an unpainted sapling, 38 inches long, and curved at the end. From a lively account of a game played long ago near the Yellowstone-Bighorn confluence, it appears that the Crow permitted players to carry the ball in their hands, contrary to the general rule as noted by Culin. Thus, Long-ear's daughter participated on horseback, dismounted when the ball was knocked towards her, picked it up, and mounted her horse, the women of the opposing side seizing him by the tail and hanging to his sides. Being unable to get through the crowd, she threw the ball to the goal. At the same gathering another woman seized the ball and ran with it. Her opponents gave pursuit and seized the belt, but unbuckling it she left it in their hands. When they were about to catch her, she growled like a bear and raised her hands; by thus frightening the other side she succeeded in making the goal. This my informant considered great playing. When men and women played together, a particularly fast couple was selected on each side, probably for the final drive to the goal. On such occasions the women dressed up in their best clothes, wearing elktooth dresses reaching down to their ankles.

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[1] Culin, 399, 415.
[2] Quoted by Culin, 616, 637.
[3] Lowie, (f), 53, 70.

Naturally all sorts of diverting incidents occurred. Once a woman raised her dress in running away from her pursuers and managed to get the ball to the fast couple on her side. The spectators said, "They saw her legs but were not able to catch her." Again, it happened that a woman would take the shinny sticks and thus address the young men: "Young men, I'll hug you and take your blankets away from you," the latter being presumably an allusion to the stakes wagered on the issue of the game.

Archery. As Culin points out, the Crow shared with the Gros Ventre and Teton the practice of shooting at a grass target.[1] This game is called *bā̆́patarī̀o*, the target being called *bā̆̀paté*, the last part of the term being derived from the stem *dī*, *rī*, to shoot at something. One of my interpreters further analyzed *bā̆̀paté* into *bāpé*, nose, and *até*, sharp, which would give to the game the name "shooting at a sharp nose."

In the early spring the boys would say to one another, "Let us shoot at the grass target for the fun of it" (*bā̆̀patá warī́-kci-wōk*). They gathered up *pū́puə* grass, made a bundle about a foot long and thicker at one end, and tied it together with sinew or, if away from camp, with willow bark (*baríca*). The shapes of the Crow and Gros Ventre wisps figured by Culin are remarkably similar, but the latter is three inches shorter. This target was laid down on a hillside at a considerable distance, which Mr. Simms, quoted by Culin, sets at 40 feet. The players were divided into sides and staked their arrows on their marksmanship. Each side discharged four (or, according to another account, five) arrows. Whoever came closest to the target took all the opponents' arrows. As a sequel they threw the wisp into the air and tried to shoot it. According to Simms an archer who has hit the wisp at a distance, takes it up, and puts it between the index and second finger of the left hand, crossing and resting on the arrow, which is ready to shoot, but pointed downward. Raising bow and arrow with the grass bundle still resting on it, he releases it and discharges an arrow at it. If he hits it in the air, he wins an arrow. According to one informant it was the less clever players who threw the target up into the air rather than let it glide down. Some boys would stick an arrow into the sinew or bark wrapping. They were regarded as cheating and were barred from the game.

Another game played by boys in order to become expert marksmen was called *bicɛ́nde'k'uə*, throwing a buffalo chip. The boys would perforate the chip in the center; then they took their arrows, one boy made the chip roll, and the rest shot at it. The one who hit through or nearest the center won, arrows being staked on the result. Usually there were three or four players on a side. Three-wolves was hurt by an arrow while playing at this game.

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[1] Culin, 383 f., 391

Sometimes a buffalo lung was attached to a rawhide strip and a boy swung it in the air over his head. The other players shot at it, saying they were chasing wild buffalo, whence the term for this pastime, *bicɛ́reksùə*, simulating a buffalo hunt.

Still another form of archery game was known as *arūᵘtdɛ̒ʻk·uə*, arrow-throwing. It was played by ten men, five on each side. They threw one arrow, then they shot at it, and the one who hit it or came nearest scored. Then tally sticks (*bara-kíce*, mock-sticks) were used and those who got all of these counters won. It is not certain to what extent there was side or individual playing. Another informant said that at the close of the game all the arrows were set up in a pile and the marksman who shot into the sheaf took them all. Culin does not cite this as a Crow game but quotes J. O. Dorsey's description of a very similar Dakota game.[1]

Towards evening the game was sometimes varied. Two arrows were set up in the form of a cross, and others were leaned against them. Any arrow thrown against this target and failing to touch the bunch of arrows was added to it. Sometimes as many as a hundred men participated. The one who struck the target won all the arrows. One or two men were stationed at the goal as watchers and received as their fee some of the arrows that were not quite perfect. The boys also stood around waiting in the hope of getting from the winner some arrows lacking a point or feather or otherwise damaged.

Meat Stealing. When meat was plentiful in camp, the boys indulged in a pastime known as "playing the part of magpies" (*ī́piəreksùə*), which recalls a Gros Ventre usage.[2] A Reno informant said that on such occasions the boys would get together, find a deposit of black mud and daub their hands, legs, bodies, and faces till they had made themselves irrecognizable. They also rolled up their hair and blackened it in imitation of bears' ears. The people in camp knew what the boys came for and hid their meat, but the boys would snatch away what they could reach, sometimes capturing a whole rib, and then made their escape. Later one of the party returned to camp to get buffalo chips, which he brought to his comrades. All then went to a river, sat down in the shade, built a fire, and roasted their meat and fat. The cooked food was piled on leaves and cut up by two boys, who asked, "Who got this meat?" Sometimes a tongue or some other delicacy had been stolen, and in that case its thief got the first chance to eat them. The other boys would say, "He is the best one." He himself said, "The next time even if I should get hit, I will try to get a good piece again." All of the boys kept some fat after the repast, and each would say, "If anyone gets up, I'll rub my grease on him." All sat still until one of them forgot the rule, when all his companions would leap up and wipe their hands with the grease all over his body. Before the party's return the women in camp had prepared chips of meat, which they threw at the thieves when they got back, and the boys would throw them back at the women.

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[1] Culin, 393.
[2] Kroeber, (b), 182.

Some particulars may be added from Gray-bull's independent account. The conspirators selected the fastest runner, sang over him, painted him all over with mud, and twisted his breechclout so he should not be impeded in running. All lined up and dashed for the camp, where meat was hanging up today. By the time the owners knew what was going on the boys had fled with their booty, with the old women flying after them to recover their food. When they were in safety, the older boys said, "This is plenty, let us feast." These cooked the meat, then all would sit down. They imitated various of the military organizations. The four who had stolen the best meat were selected, each being requested to hold up the purloined food. These four prizes were put in the center on fresh boughs and their captors sat in a little circle to eat by themselves. When everyone had eaten, a herald announced that whoever rose first would have all the others wipe their greasy hands on him. Finally some small boy would forget the caution, then the rest cheered him. Fat had been broiling on the coals. One of the larger boys rubbed his hands with it and wiped them on the transgressor, and the rest did likewise, greasing all his body. He would try to wash off by jumping into the creek, but the water would glide off the fat. Then they chased butterflies and when a boy caught one he rubbed it on his breast because that would make him a swift runner.

In the night the boys sometimes stole the two outside lodge poles. Then the owners would chase them and the thieves had to run, for if they were caught their blankets would be taken away from them. They took the poles from sheer mischief in order to be chased.

Tobogganing. Sometimes six, eight, or ten ribs of a buffalo (usually of a cow) were united, a rawhide was put on top, and then a boy would coast down-hill on this toboggan. This was called *awōxarùə*. Sometimes a man would coast down-hill with a woman in this fashion, putting his legs round her and saying, "I am eloping with her" as he slid down. If a woman did not like the man who seated himself behind her, she would seize him by the hair and throw him off. If a woman was a wanton, her companion would put his legs on her shoulders. Sometimes children would overturn the toboggans of the coasting couples.

When ice had formed, they looked for buffalo skulls and tied to them a rope through the nasal orifices. Then the women would seat themselves on the skulls and be dragged by the men. Another way was to gather flat pieces of wood, cover them with hide and drag the women on these sleds. Sometimes goals were appointed, possibly some holes in the ice, and the men would race back and forth. The young men would sometimes dispute about the girls they wished to pull along the ice. This pastime was called *batūxarùə*. It was regarded as one of the legitimate opportunities for having a good time with members of the opposite sex.

Skating (*batcíruo*). In a tract about a quarter of a mile in length strips about three feet wide were cleared of snow at appropriate intervals, then the players slid over the cleared ground, ran across the intervening space to slide on the next strip, and so forth. The Lumpwoods and Foxes, accompanied by their wives, would skate, coming from opposite directions. Each side placed the strongest four men in front and these pushed their opponents, trying to break the line of the rival society. Boys and girls were pitted against each other in a similar trial of strength, with the strongest of each party in the lead. The losers would have to get out of the path.

Top Spinning. As elsewhere in North America, this was a winter game, played when the snow was several inches in depth. The top, as described to me, resembles most of the specimens collected by Mr. Simms for the Field Museum, being mainly cylindrical but tapering to a cone at the bottom. One of Mr. Simms' tops was conical with rounded base, another was pointed alike at both ends. The typical cylindrical shape with conical bottom closely resembles the Arapaho, Cheyenne, and Oglala tops figured by Culin.[1] In my earliest notes I find this game designated as *mātsire tsúsuə*, but later I recorded *binnáce* as the native name for a top.

A stick with a buckskin lash was used to clear the ground of snow and with this whip the top was spun in a circle. Some boys succeeded in making it go all the way round. They tried to see which top would spin the longest. If one top upset another, its owner won and he would cry out, "You are knocked out." Some played an unfair game substituting stone for wooden tops. The tops themselves served as stakes. Well-to-do parents made the best kind of tops for their boys, but unless these took care their playmates would steal their toys. Sometimes the children would first spin their tops and then race to a goal far off. Girls as well as boys played this game.

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[1] Culin, 733 f., 745 f.

Cat's Cradle. Cat's cradle is called *icbasé-tsìracīo*, thumb-catching. My impression is that this form of amusement is not nearly so common among the Crow as among some other tribes; various informants pleaded ignorance of how to make any figures and I do not remember anyone making them without being specially asked to do so. The only figure I definitely remember represented a tipi.

Various Amusements. In various ways boys and girls imitated the social life of their elders. When the people were moving camp in summer, the children would move apart. Girls of prosperous families owned small tents and poles; in riding some placed the poles across their stomachs, others exactly imitated the ways of their mothers. The boys would approach the girls' gathering-place, and a herald announced, "Boys, offer a horse to the girl you wish to marry." Then they offered their horses to their favorites and rode double. When the people had pitched camp, this mock caravan would likewise camp at some distance on a hill. They pretended to be married.[1] The boys would get food from their mothers and bring it to their "wives." After having picketed their horses, they ate supper. After dark they went to the real camp, each to his own home. This method of playing is covered by the term *nā́xapāsùə* (calf-skin tipi); boys from about ten years of age up indulged in it. Young-crane recalled occasions when the girls were moving their mock-camp and the boys came on horseback, knocked down their tipi and ran off with it. The girls gave pursuit, recovered the lodge, and slept in it during the night.

Sometimes the boys would kill a young wolf or coyote, bring a lock of its hair, and make their girls dance, evidently in imitation of the scalp dance. They also enacted a victorious return after killing a rabbit in the woods, whereupon they tied its head and other parts of its body to long sticks, again making the girls dance.

This manner of playing is specifically attributed to the Hammers, the boys' society modeled on the men's military organizations.[2] Sometimes the boys divided into opposite sides with their "wives" and imitated the wife-kidnapping of the Lumpwoods and Foxes.[1] If any player took his wife back, the boys of the other side would take away the blankets of all his associates and tie them to sticks.

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[1] Lowie, (f), 222.
[2] Lowie, (c), 186.

Sometimes, Young-crane said, the girls had little shields to play with. They would also make male dolls and when a boy came to a girl she would show him her doll, saying, "That's you." Then the boy would bring her something to eat. A girl might also take a doll and throw it into a lodge harboring a boy, saying "There's your boy!" Then his mother gave the girl some beads or other gifts. Sometimes the girls would take dogs, put articles on them and lead them around. When the boys approached, the dogs barked, making the boys run off. At times several girls jointly went toward a tipi where there was a boy and said, "We are coming to you." Then his family called them in and gave them something to eat and the girls would lie down to sleep with the little boy as though they were his wives. Or a bevy of little girls would enter such a lodge, one by one, dance and sing, and the mother would give them each some pemmican. This happened when there was abundance in camp.

In the winter the boys would get together and sing a song of rejoicing at the doors of tipis where some other boy lived. Then the inmates of every lodge visited in this fashion would give them some pemmican.

When traveling in the winter the boys went afoot, killing all the rabbits they could. Sometimes girls accompanied them. When near camp, they roasted or boiled the rabbits. The one who shot the rabbit would get the best part. The others would take it and throw it on the marksman's back. If a boy let a rabbit get out of the brush, they would shoot a hole through his jacket to teach him to be more careful the next time. Sometimes the boys divided into sides to see which could shoot the greater number of birds. Those who killed the first bird would shout that they had done so. The boys of the losing side had to crack the live birds' skulls with their teeth. They were also made to chew the feet, the legs, and the wings. Opposing sides also would gather birds' eggs and throw them at each other.

The boys would throw stones high into the air by the side of a creek, making them come down with a thud and simultaneously reciting these words: *ìcbiri-k·ŭ́ bằbiri-k·ŭ́p*, "His water is my water." The last syllable was to coincide exactly with the sound of the stone touching the water.

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[1] Lowie, (c), 169.

A kind of football (*bū́pts-arapī̀u,* ball-kicking) was played by the girls. The player kicked the ball about two feet from the ground and then kicked it up. If she did not miss it, she continued kicking. There was gambling on the result. This game was noted by Mr. Simms, who describes the object as keeping the ball in the air the longest time by kicking it or by the greatest number of kicks without a miss. His specimens are catalogued by Culin; each consists of a bladder filled with antelope hair and enclosed in a network of sinew, the diameter varying from 6¾ to 8½ inches. A ball collected by Dr. Hoffman is somewhat smaller.[1]

Another kicking game was called *batsitpú-arapī̀o.* The girls all seated themselves with legs extended. One girl stood up with eyes closed and kicked at the feet of one of the others. Then she took the sitter on her back and carried her far off. Similarly she carried off the rest, one after another. After kicking she opened her eyes. When the girls had all been carried far away, they ceased playing.

Footraces were and are popular among the Crow, though horseracing is probably far more commonly practised now. According to Denig the runners, usually two at a time, formerly ran about 300 yards; there were bets both by the contestants and the spectators.[2]

On the smooth ice four men would be pitted against an equal number in a game called *batcɛ́cdɛ‘k·ùə,* or *batcɛ́cdewa‘kuə* (to each other throwing). Each made a little depression in the ice, put in a small rock and said, "I am this stone" (*baxúəkìce,* my body it simulates). His opponent slid a flat stone against the rock and if he succeeded in dislodging it he won. Sometimes young men and women opposed each other in this game.

According to one statement, only one man played on each side; the others merely bet on his success; but if the playing was poor other men were substituted. Only bracelets and small trinkets are said to have been wagered.

Sometimes willow bark was made into a ring and thrown into the middle of a creek, with boys of opposite sides on each bank. Each leader had a hooked stick, tried to catch the ring with the hook and pulled against the other, so as to drag him into the creek. The players would get their clothes wet. This game was called *bawṓwaxik̄sùə.*

When the boys went swimming, they would sometimes throw stones or short sticks far out into the stream and bid someone of their number get them. If he failed, the rest threw him into the water, saying, "*ic-birapé tsitsī́mba'tsḕwik·*," "I'll make him look for his beaver."

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[1] Culin, 705, 707.
[2] Culin, 807.

In the spring the boys would put mud on the end of sticks and throw the mud at each other, whence the name of this pastime, *bat-cipíə-wā̆suə*. At night they sometimes fixed live coals to the mud and threw them, causing a swelling in the part of the body struck.

Sometimes a big dry hide was taken and a rope was run through holes along its border. The girls and the boys took opposite sides: each group selected one of their number to stand on the hide and run round on it, while their sides pulled in opposite directions. If either got dizzy and stepped off the hide, his or her side lost the game. The players also would raise the couple and again lower them four times, then they would throw them up and the one that was able to stand, won. Sometimes the girl would throw the boy off while they were in the air. This game was played at night.

Mr. Simms collected a whirling toy made of an ox's joint bone, painted red, tied round with sinew string extending 8 inches on each side, and having hand grips made of twigs at the ends. This buzz is apparently identical with one figured by Culin as coming from the Oglala.[1]

Sometimes men coming back from the chase would bring home a buffalo calf for their children. These either pretended hunting it or kept it as a pet with a rope round its neck. Sometimes little children would ride double on it. After a hunt the boys would ride round looking for calves that had lost their mothers and would kill them with bow and arrow, bringing home the meat and giving the girls they played with the skins for their toy tipis.

WAR.

Customs connected with war have already been described or at least mentioned in previous papers.[2] Without pretending to give a systematic survey of this most interesting subject I append accounts and notes as yet unutilized.

Honors. Though there is unanimity as to the four types of exploit required for the chieftaincy, as explained elsewhere, there is some difference of opinion as to the relative value of the several types. Gray-bull considered all four as approximately on a par, while Blue-bead gave precedence to the successful captaincy and the coup proper. Flat-back said that four men were allowed to strike coup on the same man and to touch a gun, but of course in such cases the gradation of honor was according to the order of striking or touching.

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[1] Culin, 756.

[2] Lowie, (b), 230 seq., (h), 359 seq.

Gray-bull said that a warrior who had struck a coup or captured a gun put hair only on his shirt, while a captain was privileged to use hair on his moccasins also. According to another statement, a captain who had returned with captured horses put horsehair only on his leggings, while chiefs, *i.e.*, those with at least one deed of each of the four types of exploit to their credit, tied horsehair to their leggings and shirts.[1]

As explained in a previous publication, Bell-rock was regarded by my informants as the greatest of chiefs living at the time of my investigations. In the words of Gray-bull, Bell-rock (*mi-tawúac*) was *k‘am-basā́kāce,* the very first, for he excelled all others in every point: he had taken five guns, cut two horses Gray-bull positively recollected and probably still another; struck six undisputed coups; and led eleven war parties my informant definitely knew of though he was sure there had been more. By way of comparison may be listed the achievements of other distinguished men. Plenty-coups, the chief acknowledged at the Agency, was credited by Gray-bull with seven coups, three or four guns, four picketed horses, and nine war parties. This, of course, is somewhat inconsistent with the statement that Bell-rock excelled on every score, and suggests that in spite of his affirmation that all honors were equal Gray-bull gave precedence to the captaincy. Gray-bull himself, universally recognized as a very brave man, had cut three horses, taken three guns, struck three coups, and led three parties. Accordingly he put hair on his moccasins, leggings, and shirt. Hillside would have been a chief if he had had a picketed horse to his credit. As a matter of fact, he did cut a horse once, but the enemy recovered him so the deed does not count. Flathead-woman lacked a coup. It does not matter how many times a warrior had performed meritorious deeds, he could not lay claim to being a chief unless he had performed at least one of each of the four categories conventionally recognized. But of course, apart from this, his social standing rose with each deed. A captain, *e.g.*, who had come back with scalps or horses, would act as crier on public occasions and rank next to a chief. Those who took the part of crier without such qualification were mocked in the old days.[2]

As explained elsewhere, war experiences were represented on robes and on the draft screen of the lodge rather than on its cover. Blue-bead said that enemies who had made a desperate stand were designated by a circle and the Crow charging them by horse tracks. An enemy's shield was exactly represented. If a man was shot with a gun, the event was duly drawn.

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[1] Cf. Lowie, (b), 231.
[2] Cf. Lowie, (e), 82 f.

The Crow, like other Plains Indians, esteemed exploits according to a rigid conventional standard, paying little regard to the special circumstances. A coup was a coup whether the enemy struck was a warrior or a woman. Thus Bull-tongue tells of being dispatched as a scout to the Dakota camp; he saw a woman urinating, shot and killed her. On the other hand, though Hillside had gone through the danger of cutting a picketed horse his recovery by the enemy wiped out the accomplishment.

Flat-back's Account. In 1913 Flat-back summarized the typical procedure of a war party as cited below. His narrative is interesting because he sharply differentiates between an expedition to the Piegan and one to the Dakota,—the former being conceived as a horse raid, the latter as an attempt to strike coups and kill the enemy.

In an expedition against the Piegan a man who had dreamt to that effect announced that he was about to set out, and those who wanted to joined him. First all gathered in a tipi to sing the scout's songs, *tcī́tbuəhùə*. Among the words sung are these: "I am going to bring horses, I'll bring some back." After the singing they shout. The number of scouts depends on the size of the party. They go toward the enemy's camp and return. When they have seen something, they go back yelling and their comrades recognize the shout. When they get close to the main body, they shake a gun or some other object in the air, indicating that they have really seen something. The party stand in a semicircle, round a pile of buffalo chips, and sing. Then the scout leader comes and kicks over the chips. The captain asks for the report. The scout answers, "The enemy is over there." When the sun is low, each ties his medicine to his body and paints his face according to his medicines. The captain spreads something on the ground, lays his medicine on it, and sings toward the enemy's camp. Sometimes he whistles and sings, saying, "So many horses are given to me." When ready they start. One man is chosen to lead and they approach the camp. The captain bids the party gather, goes round them, and prays thus to the Sun: "If all my party get home well and with plenty of horses, I'll make you a sweatlodge (or an offering of cloth, etc.)." Then he bids one or two to go to the camp and bring all the horses that can be driven off. When the horses are brought to him and he is satisfied with their number, they start homeward. They run all night and the next day and the second night. On the following day they take their time. After running they kill buffalo and eat. The duration of their journey depends on the distance of the camp. When they get near the Crow camp, they shoot into the air. They ride the captured horses round camp. The scouts carry wolf hides on their backs and sing *tsū́rə* songs. At night all in the party gather in the captain's lodge, where the young women of the tribe come and sit behind them. The *tcī́tbuəhùə* are sung. Pudding has been prepared and is given to the women after the singing; they take it home and return. Then the men and women stand in a circle.

When going against the Dakota, the Crow stood outside the door of a tipi, either afoot or mounted. They had songs for that also. The scouts reported as in the other case, and the tying of medicines and face painting likewise occurred. There was a great deal of singing before they charged. Everyone wanted to be the first to strike a coup. To do that it was necessary to have some medicine. Coming back, they carried the scalps with them. They ran as in returning from a horse raid. Buffalo blood was mixed with fine charcoal and the first coup-striker and first gun-taker blackened their shirts with the mixture. When the party approached the Crow camp, two men were sent toward it as scouts. The party camped close to the camp and stayed there overnight. Just before sunrise they advanced to the edge of the camp and shot into the air. Seeing the scalps tied to their sticks, the people at home know that the warriors have killed some of the enemy. All get in a row and sing, going about camp. The first coup-striker goes in front. After the singing, the men take drums while the women dance in front of them with the scalp sticks. Then an *ā́saʽke* (father's clansman) of one who has captured a gun or struck a coup goes to the warrior's tipi and sings songs of joy (*mā́tsik·arùə*). The brave gives everyone some present. The scouts sing *tsū́rə* songs and go about camp. There is singing in the lodge and the women come in and sit behind the men. Afterwards they go out and dance. The women choose one or two of the war party to take the lead. They dance as they approach the captain's lodge. The women all hold willows in their hands, strike the tipi, and dance. They dance a day and night after killing one of the enemy.

Flat-back added the following personal experiences. Once in the fall a party of Crow Indians set out under the leadership of Lean (*xaráxik·ā̀te*). They went on this side of the Missouri. The Dakota had slain many of the Crow, that is why this party was organized. The Dakota were camped on the Bark (?) River. "We saw the camp, caught sight of buffalo hunters leaving it and watched them. Most of the hunters remained in one group, but one man went in a different direction, into a creek, and we started after him. He dismounted and went rather far from his horse. At first we passed him without seeing him. One of us had a slow horse and was the first to espy the enemy. He turned towards him, and as he approached quite near, the Dakota was going to shoot him, but the horseman rode over him. The enemy got up and seized his gun. Then two of us came up. He aimed at them and they did not strike him but went on either side. Next I and another man got close to the Dakota, turned aside, passed him and dismounted. The other man was in front of me. The enemy was facing in the opposite direction, whence another Crow was coming. This Crow seized the Dakota's gun, but the enemy jerked it out of his hand and the Crow fell on his knees, rose and ran off. The enemy did not shoot. We two had got there. Just as I was about to seize the enemy's gun, my comrade seized it; I also took hold of it. While we were trying to wrest it out of the Dakota's hands, it went off without hitting any one. We jerked the gun out of his hand. Then Female-face (*īs-bí'k˙e*) took the Dakota by the hair, put a pistol to his face, and killed him. This happened in the morning. We ran all the rest of that day and that night till we got to the Missouri, where we hid in the woods. In the morning we crossed the river and slept on the other side that night. We started from where the (Prairie) Gros Ventre now are; the next morning we woke up and saw buffalo by a creek near the Wolf Mountains. From the time of the killing it took us four days and until the fifth night to reach home.

"The winter before this party some Crow Indians had killed a Dakota in the same place. His companion fled and told his people, who tracked the Crow and killed twenty-nine of us. We mourned. We did a lot of dancing when we had killed the first Dakota in revenge."

On another occasion Flat-back killed four squaws near the enemy's camp and took the scalps home. "Medicine-crow is a chief, yet he does not equal me."[1]

Grandmother's-knife's Narrative. There were plenty of buffalo on the other side of the Musselshell. The people had done a good deal of hunting and were moving towards the mountains. Several young men went out on a war party; I also went. There were about sixty altogether. We stopped at the Missouri some time in the afternoon. We lunched on this side. It was about this season of the year and the river was high. We built a raft, laying our saddles and guns on it. Then we swam across with our horses and slept there afterward. The mountains were not far away. There was a thick wood on our way. About noon we were pretty near the foot of the mountains. There was a creek and a flat piece of ground on its side. Some buffalo were there; we chased and killed many of them, took the meat, and went toward the mountains. There we stopped and smoked our meat. The sun was low. We went into the mountains and slept there. The next morning before sunrise we got up, then we ascended the mountain. On the summit we stopped and smoked.

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[1] This is a joke based on the fact that Medicine-crow was Flat-back's "brother-in-law", hence liable to this sort of pleasantry. See Lowie, (e), 80.

Some of the young men had gone up during the night. The ground on the other side was rather level. When we stopped to smoke, one of the scouts returned and we gave him some meat to eat. "A Dakota camp is nearby," he said. He had seen calves looking for their mothers and buffaloes looking for their offspring. They were somewhere nearby, we might expect to see them that day. We went down the other side of the mountain. Before noon we got to the foot of it. There was a good deal of timber there. Some of the men had gone to high places but had not seen us. It must have been about four o'clock. We started off towards the east along the foot of the mountains, reached a creek, and stopped at about five o'clock. Then we heard coyotes barking up on the mountain and the scouts came back. They formed in line and sang a song. They approached and we asked them questions. "We have seen the camp, they are down the creek." Some of the men were well acquainted with the country and inquired just where the camp was and then said it was not a hostile camp but rocks looking like tipis from a distance. When the sun was very low, we heard the coyotes howling again. We got up in line and sang a song. The scouts came to us and said the camp was at the foot of the mountains. We saddled our horses, ascended the mountains, and got to where the scouts had sighted the camp. We stayed there till the next morning.

We were going to kill an enemy, but no one left the hostile camp. A man named Cuts-the-bear's-ear made medicine, using his pipe. He was going to hook an enemy with his pipe and bring him out. He sang a song, made a motion with his pipe, made a drawing of a man on the ground, and laid his pipe on it. "Someone will come out," he said. They looked for a while, then a man came toward the mountains riding a sorrel horse. "There's one man coming." He got to the foot of the mountains. We chased the man toward camp and killed him. He was a young man and had no gun.

Then we ran away along the foot of the mountains. The enemy knew we had killed this man and pursued us along the other side. That night we ran to the Missouri, swam across before sunrise, built a fire, and ate. We had scalped the enemy and cut off one of his ears. He had good hair. When we had eaten, we went up on the hills. We got to a cow, not a buffalo, but a cow. There were no white people about then, I don't know where she came from. This happened forty-one years ago. We did not take the cow, but just killed and left her. All day we ran. Another group of Indians came running toward us and many shots were fired on both sides till we discovered that both groups were Crow. There were many on the other side; they were also out on a war party. When they camped, we told them we had killed an enemy. "Where is the Dakota camp?" "They are across the Missouri at the foot of the mountains. Where are the Crow camps?" "The Crow have moved toward the mountains, to the other side of the Musselshell called Buffalo-heart (*bicɛ́-rằsec*)." We continued traveling that night, got close to camp, and halted just before sunrise. We stayed there till sunrise, then fired shots and ran to camp. The women came out. We had a big dance (*bārisū́m matsā́tsk*). Hillside, Cuts-the-bear's-ears, Wolf-bear, and Medicine-crow were the leaders; all four of them carried pipes. Cuts-the-bear's-ears had brought the man out of the lodges and caused him to be killed. He was the main chief, but all four were permitted to mention the deed in reciting coups.

Sometimes there were more men in a party. Soon after this one returned eight hundred of us left, but some of them were (Prairie) Gros Ventre. We were chased back, but only one man was killed.

During the year of the Custer battle I was with the soldiers, drawing thirty dollars a month. I got 180 dollars in all, so I must have been with them for six months. I had been on the warpath several times. The first time I went I was fifteen years old; we did not see any enemy that time. I was seventeen the year of the Custer battle.

The captain of a party selected as scouts, *tcī́tce*, those known for their cunning and their ability to run a great distance. When looking over a hill, a scout put a wolfskin on his head so that buffalo seeing it would take him for a wolf and not run away. I was out twice under Bell-rock; both times there were many soldiers with us, a hundred and five hundred, respectively. There were about ten captains on these expeditions.

On the former expedition we started in the winter, went down the Yellowstone, and came to some white people who must have had bread but were living on buffalo. They had no horses. They had killed many eagles and gave us the feathers. We crossed the Yellowstone, got to a creek, and halted. One of the captains was regarded as medicine and Old-crow asked him to make medicine that night and discover the enemy's whereabouts. He made medicine accordingly. In the morning he told them the enemy was far away, but some were in the Yellowstone valley. We didn't go toward the enemy, but in the other direction. We kept going till we got to a creek by a thick wood. We got to a campsite. The poles were still there. Some war party had stopped there. We covered the poles with cloth, yet some remained uncovered, indicating that it had been a big party. After we had eaten, one man went out and announced, "The party that camped here left three days ago. The enemy outnumbered us. There are no men in the main camp we come from. This party is going there. Track them and overtake them before they reach our camp." We set out that night. It was very cloudy. We camped and slept in the bed of the creek. In the morning, when we rose, we saw the tracks of the party. We were on the gallop and kept on going till the sun was very low. There were plenty of buffalo; we killed them. We got to a river and camped there. In the early morning we saddled our horses and went off. When we had traveled a while, more buffalo came and ran among us. The young men took their guns and killed many of them. Some young men drove the horses to a river. Those who had killed buffalo were butchering and did not come. Coming to a creek, they saw on the opposite bank the poles of a tipi left standing. Some of the men saw it and said, "Those are Dakota who stopped here, they have moved only this morning." They began to halloo. The butchers came up and all of us set out on the trail. There was light snow on the ground. Young-mountain, a young man, another named First-crow, and Bell-rock followed the trail, leading the rest. After a long time they returned to the main party. "They are nearby, get ready and mount your best horses." The trail did not lead to the main watercourse but up a coulée. Ascending this, we saw one man between the main party and the three leaders. The man held out his arm and made a sign for us to come on. Some of our party looked after our horses. There were seven Dakota men. They took their guns, came out and fired at us. We fired back. They ran into a hollow. We surrounded them. They shot one Crow through the shoulder, another through the elbow, shot one horse through the ankle and grazed another's belly. We killed them all. There was no Crow killed.

Gray-bull's Reminiscences[1]. When I was about four years old, the Crow were camped on Pass Creek, just above Wyola. The Dakota then drove the Crow back to camp and killed three boys engaged in chasing calves. Altogether they killed twenty-three of us, including one pregnant woman. Then we drove them back towards the Wolf Mountains. I don't know how many Dakota were killed,—about ten; two of their women were captured and also some of their horses. This is my first recollection.

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[1] Gray-bull was one of my main informants and data obtained from him and bearing on war customs will be found scattered in all of my publications. The information here presented was furnished in response to a specific request for memories of early days.

That summer I hunted birds and chased butterflies. In the winter we camped in the Bighorn Mountains. A man named Tears, with his wife and five or six children, went down the mountains while the rest of the people remained above. The Piegan killed them off. Some people went out buffalo hunting from there, remaining out all night. The Piegan killed one and wounded another of these. The next summer we camped at the head of Pryor creek. A war party set out from there with five women and went to the Dakota. The Dakota killed eighteen Crow of this party and took three of the women and one little child captive. The place where this occurred is called Rain-hill. The following summer we were at the mouth of Reno Creek, when a Crow who had married a Dakota woman and had been living with the Dakota brought back one of the captured women. The captive told her people that the Dakota-Crow accompanying her had counted coup on a Crow boy captive and killed him. The Dakota chief whipped the murderer and would have shot him had not his people taken away his gun. When the Crow Indians heard this, they were going to kill the Dakota-Crow, but he ran back to the Dakota and was never seen again.

Some time after this the Hidatsa brought to the Crow the little boy who had been captured with his mother. The two remaining women captives hid and escaped to the Crow camp, where they stayed for two years. Then they went to the Hidatsa and gave horses to the man who had brought back the captured Crow boy.

In the battle in which the three women were captured one Crow dismounted while his people were being driven back. He could not be shot. A Dakota also dismounted and approached him; he too could not be shot. Both had a bow and arrows. The Dakota first let fly an arrow, and hit the Crow on one side, but the arrow flew off. Then the Crow shot his enemy in the head, but he did not fall down. The Crow seized the enemy by the breast. He was wearing a buckskin shirt. Taking out a knife, the Crow stabbed his foe above the collarbone and cut his body open, yet he did not fall down. Then a second Crow shot him in the back of his head and he fell forward. The other Dakota warriors came up and raised the wounded man and almost everything inside his body fell to the ground.

In the same winter the Piegan stole some of the Crow horses at night, among them those of the man who had slain the Dakota. He and three others started in pursuit and rode all night. The next morning they were on top of a high hill and saw a Piegan on horseback. His horse got exhausted and he proceeded afoot. The Crow approached him. The enemy twice shot his horse with a pistol and shot the Crow twice or three times without killing him. The Piegan exhausted his ammunition. Then the Crow dismounted, seized the enemy by the arm and swung him round till he was quite dizzy; then he released him and the Piegan fell down. The Crow jumped on him, stepped on one arm, took hold of the other, cut off first one arm, then another, then cut his neck off.[1]

When a boy had been on the warpath, he would approach those of his age-mates who had never had this experience and address them as though they were women: "*dī'cik'ā́ke-sa-k, dícire cúək'*" (You are not a boy, your vulva is blue). Then those thus reproved were stimulated to go out on war parties. When I first went out and got back to camp, I was eager to say this to the boys who had stayed home. I said it to them all the time, *e.g.*, to Bird-tail-rattles.[2]

When a boy first went on a war party, his companions would play tricks on him. They would send him to a certain warrior, telling him to ask for shavings from a buffalo hide. The man would answer that he had eaten his and would send him to another warrior, and so the novice was sent back and forth. Also they would send him for water without telling him where it was. Further, the young boys had to carry all the meat. That is why they tried to make the men eat much, so that they would not have such a load to carry. The boys who accompanied a party divided into two sides. The first one to awake would bring water and pour it over those of the opposing side who were still asleep. This was kept up so that all the boys wanted to get up first.

When the warriors returned from a war party, plenty of pudding was prepared in some big lodge. Then all the party sang songs and then went outside. Some of them were singers and beat drums. Each man had a girl and each girl carried a long willow stick. Those who did not sing also had willow sticks. All then ran to a tipi and beat it with their sticks. The singers sang; there were no words to their songs. After the beating of the tipi, (*acditúə*), they sang another song with the following words: *hirā waréc, kamba'kúk, biríchbactsi*, "Just now I had gone, I have returned, kiss me." Then they would go to some other big tipi. Usually all the horses ran off when the *acditúə* was performed.

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[1] Here Gray-bull gave an account of some children's games, which has been utilized in the appropriate place.

[2] This man had joined us during Gray-bull's narrative.

When some time after this the camp moved, the same warriors reassembled with their drums and went together singing. If there was anything in the road, they beat up the horses.[1] When the people of the camp got to a place where there was a single road, these warriors would stand on both sides and sing songs and shoot into the air. Girls and women were bashful about passing between them, and men would not go through, but made a détour on horseback. When all the people had pitched their tents, these warriors came to the door of some big tipi and sang a few songs, receiving something to eat. All dismounted to eat. The next day they took girls behind them on horseback, went to any tipi, sang at its door, and rang bells for music. When they moved to a camping place, the war party reassembled with all the girls they could muster, danced, and went about camp. When it got dark some went home, but others kept on dancing throughout the night. These tied one another together with ropes. About daybreak the women dancers went to the members of the war party and jerked off the comforters covering the men and their wives. This was to rouse them for another dance. When all warriors had been awakened, they reassembled and danced. I myself danced twice all night and went with a woman who roused the braves by pulling off their comforters.

Sometimes a war party traveling afoot had dogs to pack their moccasins. It was hard going on a war party in the wintertime. At night they had merely a blanket for covering and they lay down on a bedding of bark and grass. The dogs did not require leading, but followed along. When stopping for the night, all helped build a shelter. The boys did the cooking. In the morning the scouts went out before any of the others were up and ascended a high hill. They stayed till the rest of the party had eaten and started on their tracks. Then the scouts ascended another high hill and continued in this fashion. They had nothing to eat that day. The scouts kept on ahead till they sighted the enemy. Then they returned to the main party and hallooed. The main party got up in a circle and put buffalo chips in the center. If the scouts had seen the enemy, they waved something in the air in token thereof. If they had only seen the tracks of buffalo killed by the enemy, they did not shake their blankets. When they got back to the party, the first scout kicked over the pile of chips and reported what he had seen. The scouts then ate meat. Then everyone painted up and made medicine. Some were left to wait for the rest; any old men, boys, and women were left behind. If anyone had the blackbird for his medicine, he was chosen as leader against the enemy. He started on the run and continued running. Those who were exhausted returned to those who were waiting. When the rest got close to the camp, the captain sent about four to steal horses. They would bring horses and return for more if necessary. Then they started homeward. They had to run all night and all day. Having no saddles, they had a hard time riding. They continued the next night and day. Their buttocks were worn out (*ū́ᵘce pā́tsik·*). Sometimes they did not get enough horses, then some had to go back afoot and were usually killed. They liked horses very much.

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[1] Meaning obscure.

Once I went to the Shoshoni. We followed the tracks for two days and two nights without anything to eat. During the first three days we had nothing to eat either, making five days in all. When we got to the buffalo, we were nearly all of us so weak that we walked with the aid of canes. One man was sent to kill a buffalo. He loaded his gun with two bullets. When he had gone, another man prayed to the Sun: "All of us will give you a piece of skin if he kills the buffalo." He killed one buffalo, cut its belly open, and dipped up the blood with his hands and drank it. We washed the manifolds in the blood and ate that first. The rest we took to a creek nearby and ate till we were very full. We lay down and slept on the meat for our pillows. We had stomach ache that night and vomited all we had eaten. One of the old men told us that was because we lay on top of the meat, so thereafter we placed the meat beside ourselves and did not vomit thereafter.

Once two parties went against the Piegan, captured some horses, and went back. It snowed. There was a snowstorm. One party lay down in a coulée, the other in the brush. It snowed so hard they could not get up and most of them perished. Only two or three survived of one party, and five died in the other. I was not in these parties.

Miscellaneous Data. When the Crow saw a person near camp, they would cry "*hḗha!*" If he did not reply "ɛ̀" (yes) or "*he,*" in token of being a Crow, they regarded him as an enemy. They might also call out "*cik·á*" (boy), expecting the same reply.

From Beckwourth's narrative[1] may be gleaned a number of interesting data on war, which I present below, enclosing in parentheses the precise page references. The editor of Leonard's Narrative, Dr. W. F. Wagner, has challenged Beckwourth's veracity,[2] and there can be little doubt of Beckwourth's constant attempt at self-aggrandizement. Nevertheless, whether he arrogated the glory that properly belonged to other warriors or not, there is no question of his reproducing in the main accurately the martial conceptions of the Crow, which is more important than the correctness of his personal record.

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[1] Bonner.
[2] Leonard, 264.

Among the well-established facts referred to by Beckwourth may be cited the blackening of warriors' faces in token of victory (pp. 153, 160), the use of dogs for packing moccasins (p. 163), the glory gained through rescuing an unhorsed tribesman by riding double with him (p. 206), the practice of severing fingers in mourning (pp. 163, 267, 269, 391), and the view that there shall be no victory celebration if a Crow has been killed in the affray (pp. 163, 169, 197). In the same category may be included the giving of trophies to wives and kinswomen (p. 154), the whipping of men by the police for going on unauthorized raids (pp. 287, 367), the surprising of small parties of hostile buffalo hunters (pp. 228, 235), and the use of looking-glasses in signaling (p. 241).

The distribution of property by a father in honor of his son's first exploit (p. 154) is also entirely in keeping with Crow conceptions. On the other hand, the statement that comrades must not join in war parties so that one might stay at home to look after the other's interests (p. 156) is contradictory to my information.[1] I should also like to check the statement that a female enemy was invariably regarded as her captor's sister and accordingly could not be married by him (pp. 212, 222). On the other hand, Beckwourth is doubtless right in saying that the lot of captured women was usually no worse than that of the Crow women generally and that they were married by the tribesmen, the captor apparently having the right of disposal (pp. 164, 212). That male captives, especially young boys, were also kept as more or less naturalized Crow tribesmen (p. 357) seems certain, though the consciousness of the foreign origin of captives was not wholly lost, as shown by the special office assigned to such a "*dåtse*" in the Sun dance.[2] Our author has it that these "hyphenated citizens" had a special function, since newly made captives of the same tribe were likely to make confidantes of them and thus cause important information concerning the enemy to be transmitted to the Crow (p. 357). According to Beckwourth, the recovery of horses stolen by the enemy was esteemed more highly than the capture of new horses (p. 160). In connection with the familiar feature of mourning women soliciting a warrior to avenge their loss the petitioners are reported to have lifted the lodge directly from over him, leaving him in the open air (p. 166). When a war party had lost one of its members, they are said to have refrained from dancing and to have worn their mourning paint till they had killed one of the enemy (pp. 188, 226). Beckwourth has a good deal to say about an Amazon who after the loss of her brother vowed to kill a hundred enemies before marrying and achieved prodigies of valor (p. 202 *seq. et passim*). Unquestionably this part of his narrative has been considerably touched up, and I failed to get corroboratory testimony. Nevertheless, a germ of truth may be granted to the tale: I at least heard of a woman who had been sent to war by a famous shaman, and one of my own female informants laid claim to a coup, though her pretensions were derided by a man I consulted on the subject. Beckwourth reports one case in which a captured Blackfoot horse thief was thrown into the flames of a large fire (p. 323). In my informants' accounts there repeatedly occur references to "fortifications" or "breastworks" used by the Crow, the native term being *minaxtsé*, which is also used for a pound or corral. I never obtained a clear account of what they were. Beckwourth several times refers to "sand forts" used by the Blackfoot (pp. 172, 243, 290) and presumably not very different from corresponding Crow contrivances. His most circumstantial account (p. 242 f.) is as follows:

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[1] Lowie, (b), 212.
[2] Lowie, (d), 31 f.

> I saw that the Black Feet had chosen a strong position, and that we had another fort to storm. It was built partly by nature, but human industry had improved the stronghold. It was low water, and there was a pile of drift on a naked sand-bar, and trees had been felled from the bank upon the drift-pile, forming quite a shelter. Over this position the enemy was placed, protected with a breast-work formed of timber taken from the drift.

The style of fortifications used by the Blackfoot in 1834 in a memorable battle also described by Beckwourth (p. 189) is thus explained by Leonard.

> . . . the Blackfoot had chosen a most fortunate spot to defend themselves, and by a little labour found themselves in a fort that might have done credit to an army of frontier regulars. It was situated on the brow of a hill, in a circle of rocks shaped similar to a horseshoe, with a ledge of rocks from three to four feet high on either side, and about ten feet, on the part reaching to the brink of the hill, with a very creditable piece of breastwork built in front, composed of logs, brush, and stone."[1]

On this occasion a relatively small group of Blackfoot to the number of sixty-nine were attacked by the Crow camp and after an heroic defense were massacred to a man. According to Leonard, the victors cruelly tormented their helplessly wounded foes before killing them and two days later the corpses were beaten and mangled. Leonard gives a vivid account of the simultaneous celebration of victory and mourning of deceased relatives after the sanguinary encounter. Women and men separated for public self-torture, the former pricking their heads from ear to ear with an arrow point, the latter correspondingly gashing their legs and arms. This was followed by the hacking off of fingers, in which both sexes indulged. The faces of the women were not washed, remaining blood-stained until the disfigurement wore off. A subsequent victory dance was followed by a sham battle.[1] On a later occasion when a single Blackfoot marauder was slain Leonard made an observation corroborative of all other information on the subject and couched in almost the same words as those used in a corresponding situation by Beckwourth:

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[1] Leonard, 262.

> It appears natural to these Indians to exult more over the death and scalping of one enemy without the loss of one of their own—than they would to kill fifty of the enemy and lose one of their own.

The victim was hung from a tree by the neck, whereupon the men shot at him and the women pierced him with sharp sticks.[2]

Miscellaneous Data.

Ideal of Beauty. The Crow have very definite notions as to both masculine and feminine beauty. In order to be regarded as handsome or beautiful (*ítse, ítsik·ãte*) a perfectly straight nose is considered indispensable. Slimness of body is desirable. I got the impression that the people are extremely chary of applying a complimentary term about a person's looks. They ridiculed the idea that certain individuals I suggested could be rated as good-looking. One woman with a handsome figure was considered too tall and, more important still, had a somewhat curved nose. One man was too short, another too tall.

In this connection it is interesting to note that distinct tallness is regarded as a blemish. The Crow are among the tallest Plains tribes, yet they do not look kindly on great stature. I was told vehemently that Moon, whose net height I estimated at 6 feet 4 inches, and Plenty-hawk, who could not have exceeded 6 feet 2 inches very considerably, were too tall: *hátskitkācè xawá+uk‘*, "Very tall people are ugly." Once my own height, a trifle above 5 feet 10 inches with shoes, was designated as the proper one, but I am inclined to consider this as a statement colored by politeness. On another occasion Spotted-horse, about two inches taller, was said to be of the right stature. A man whom actual measurement proved to stand 5 feet 8¾ inches in his moccasins spoke in deprecating terms of his height. As a result of my questioning I think I am not far wrong in setting the ideal Crow's net height at between 5 feet 10½ inches and 6 feet ½ inch.

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[1] Leonard, 262–274.
[2] Leonard, 276.

Spotted-rabbit is referred to as the best-looking Crow that ever lived: "There were no pimples or scars on his face, he had small feet and small hands, there was no fault in any part of his body."[1]

Tribal Names. The following terms are used to designate foreign tribes:—

awac̆ɛ́ (awé, earth; acɛ́, lodge); xō̃xace-akdū́ce (xō̃xace, corn; ak, one who; dū́ce, eats), Hidatsa
asa'kacɛ́ (as, lodge; hā́kace, last), Mandan
a'panṓpisé (a'pé, ear; anṓpe, hole; isé, big), Arikara
nakṓtə, àkbareacū́pəc k·o (ak, one who; baré, indefinite, acū́, head, páck·u, cut), Dakota
bik·ā́cɛ (bik·é, grass; acɛ́, lodge), Shoshoni
ī́mbatsɛ̀ (ī́re, blood; batsɛ́, man), Blood
k'ā́mne, ac-k·ā́mne, pìəkáre, Piegan
isā́+uspûce (isā́, arrow; bā+ū́c, feather; pū́ce, striped), Cheyenne
árapahṓ, Arapaho
hùrucī́re (húru, legs; cī́re, yellow), Assiniboin
apī́wice, Gros Ventre
apupé (apɛ́, nose; hupé, pierced), Nez Percé
sahī́ə (practically identical with the Hidatsa, Mandan, Assiniboin word[2]), Cree
acū́xapè (acū́o, heads; xapé, flat), Flathead

The following renderings are doubtful: matṓp'e, Northern Dakota; miripā́xuə[3] (miré, water; pā́xuə, scraping), Kiowa; dū́cbatsɛ (dū́se, rib; batsɛ́, man), Osage; acipī́te (acɛ́, lodge; cipī́te, black), Ute; iə́xuxke batsɛ́ (ī́əxuxke, Fox), Indian tribe in Oklahoma; bik·ā́sa'dakdū́ce (bik·á, grass; akdū́ce, eater), Paiute; ū́xpicg·e akdū́ce (ū́xpicg·e, white-tail deer), a tribe on the Pacific coast; akmínaxûwe (ak, one who; mínaxûwe, paddles), Canadian tribe; bū́+akdûce (búə,fish; akdū́ce, eater),?

Although the interpreter who gave these renderings identified the Rib-men (*dū́cbatsɛ*) with the Osage, another translated the native term as "Kiowa."

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[1] Lowie, (f), 299.
[2] Maximilian, vol. 2, 544; Matthews, 200.
[3] This name occurs in a Crow tradition. See Lowie, (f), 256.

The Crow call themselves *apsāruke,* an unanalyzable term sometimes said to refer to a bird no longer seen in their country. They also speak of themselves as *bīruke,* a word probably derived from that for "we."

Sign Language (*bāpātuə*). I made no systematic effort to study the Crow sign language, though I repeatedly had occasion to see it in use. I recall particularly one occasion when a visiting Cheyenne not at all conversant with the language of his hosts was able to carry on an animated conversation with a group of Crow Indians concerning ancient warfare. In 1907 I also witnessed a remarkable exhibition of blanket signaling while driving in the Reno District with my then interpreter Dave Stewart. At a considerable distance on a hillside he caught sight of an old Indian to whom he wished to make a communication of some consequence. Not having a blanket he took off his coat and by waving it in a definite manner he soon succeeded in catching the other man's attention and conveying the idea that he wished him to meet us, which he forthwith did.

Mnemonics. Crow sometimes tie something to the little finger of the left hand to prevent them from forgetting.

Standards of Value. Since the introduction of the horse, horses served as the most prominent medium of exchange, a certain number of them, e.g., being offered to a girl's parents by her suitors. It is not certain whether any one form of property functioned with equal uniformity in the old days. However, we find reference to the payment of meat by way of getting initiated into the Tobacco society, and also learn that bows and arrows were regularly used for the same purpose.[1]

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[1] owie, (g),179, 181.

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ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

Vol. XXI, Part IV

CROW INDIAN ART.

BY

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NEW YORK
PUBLISHED BY ORDER OF THE TRUSTEES
1922

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By Robert H. Lowie.

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INTRODUCTION.

An adequate study of Crow art, or for that matter of the art of any other Indian tribe, would be possible only if all the various museums of this country and of Europe had published illustrations of the material in their possession. But even were all the objective evidence of the æsthetic aspirations of primitive tribes readily accessible, there would still remain to be explored the subjective attitude of the artists, a subject to which Professor Boas has often called attention and which has almost persistently been ignored. During my frequent visits to the Crow Reservation I collected art specimens and made some observations on methods of decoration, but without ever concentrating my attention on this phase of native activity. My own collections are indeed supplemented in generous fashion by other material, mainly from the Lenders and Tefft purchases; and through Mr. G. G. Heye's courtesy I have also had access to the material in the Museum of the American Indian, Heye Foundation. Nevertheless, I feel that my observations are inadequate even on the objective side. It is especially in approaching the delicate matter of characterizing tribal styles that the student feels the incompleteness of even a large random collection. Considering that older specimens are often of doubtful provenance, that others though certainly bought in a given locality have probably been imported from elsewhere, quite satisfactory results could be secured only from very large series of specimens from all of the tribes embraced in a survey. Since this condition was not fulfilled in the present case, my comparative results must be regarded as purely tentative and are put forth in order to be tested in the light of fuller information. That such provisional summaries are not futile is proved by the fact that not a few of Professor Kroeber's earlier generalizations, based mainly on the then much smaller collections in the American Museum, are fully borne out by the larger material now accessible. In the interest of brevity and clearness I have largely adopted the design nomenclature already used by Kroeber and Wissler in their discussions of Plains art.

The art of the Crow Indians may, from the point of view of technique, be regarded as either painted or embroidered; from the point of view of use, as decorative or graphic. These concepts lie at the basis of the classification here adopted.

PAINTING.

An informant told me that in the old days the same colors as now were used for rawhide painting, except that instead of the dark blue now employed an even darker pigment was used, one almost black. Whether this pigment was identical with a dark dirt called *awúə*, mentioned as a substitute for blue, is not clear. According to Wissler, the Dakota too had no blue pigments until the days of the trader, when they substituted them for black.[1]

A half-hourglass figure called *mā́cuce* is said to have been more commonly used in olden than in more recent times.

PARFLECHES.

Dr. Wissler has pointed out that Dakota tradition records parfleches not painted but incised, the hair of the buffalo being first removed and the designs being produced by scraping away portions of this layer, giving effects in light and shade.[2] In the Field Museum in Chicago I have seen two such Crow parfleches. According to my notes, the design consists of a central diamond flanked by centripetal isosceles triangles, and within the diamond there are several minute diamond figures. This pattern appears in two panels. The incised technique is also found in two specimens in the Museum of the American Indian, Heye Foundation,—a rawhide crupper and a sword case of the same material. In both the dominant pattern consists of elongated isosceles triangles.

A general treatment of Plains Indian rawhide decoration may properly start with Professor Kroeber's illuminating analysis.[3] His classification of parfleche styles rests on the three modes of combining rectangular with triangular figures. His first type is characterized by the exclusive use of triangles and the diamonds or hourglass figures resulting from their union; the second class partly replaces the triangles by rectangles; in the third group triangles are lacking or at best ancillary to the rectangular figures. Type I is used almost to the exclusion of others by the Arapaho and Dakota and is said to predominate everywhere except among the Shoshoni. Type II attains its high-water mark of development among the Shoshoni, but is used also by the Ute and in some measure by the Blackfoot and Gros Ventre. Type III is not characteris-

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[1] Wissler, Clark, "Decorative Art of the Sioux Indians" (*Bulletin, American Museum of Natural History*, vol. 18, part 3, 1904), 270.

[2] Wissler, *Decorative Art of the Sioux*, 256.

[3] Kroeber, A. L., "Ethnology of the Gros Ventre" (*Anthropological Papers, American Museum of Natural History*, vol. 1, part 4, 1908), 158–177.

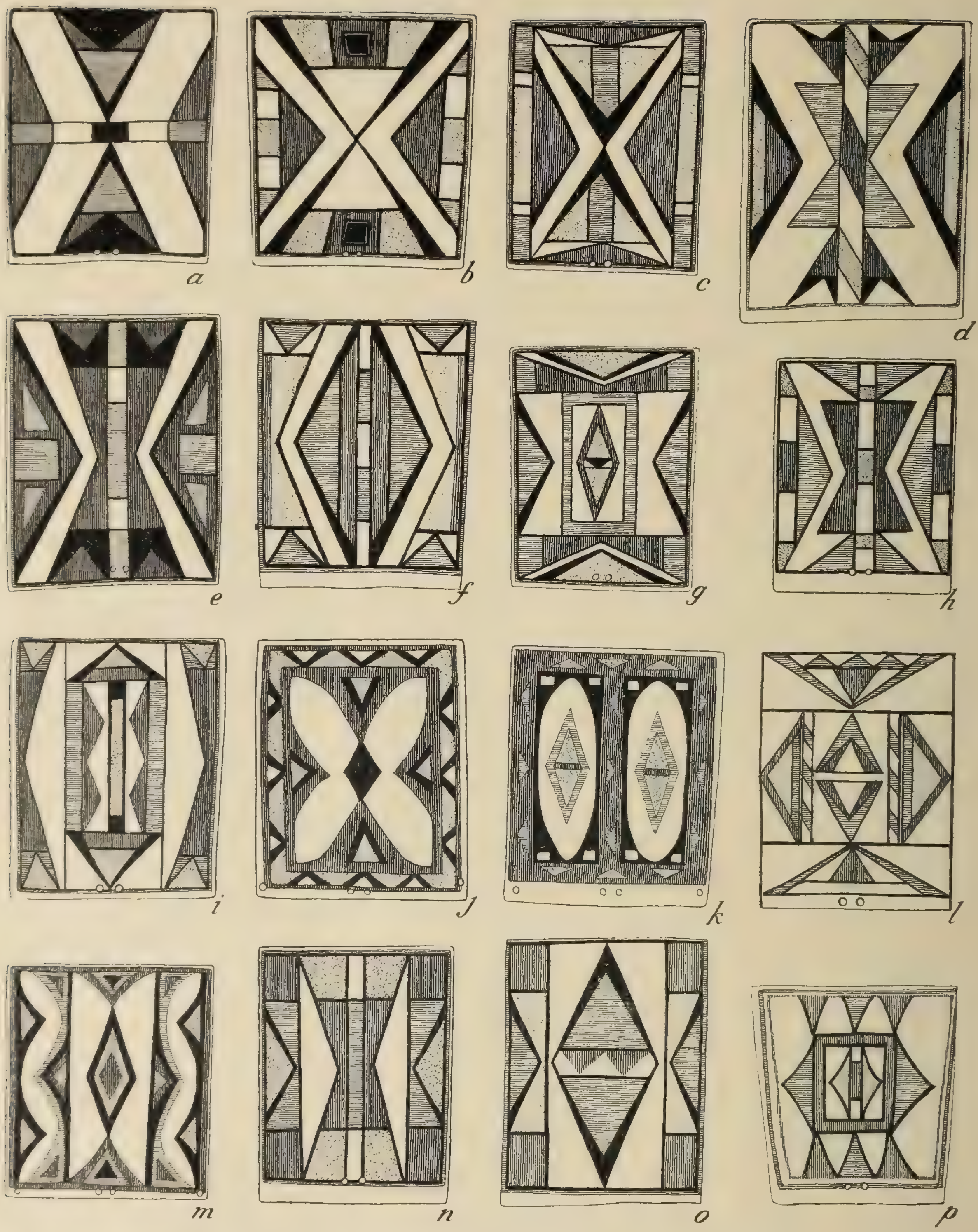

Fig. 1. *a-i* (50-6857, 6858, 50.1-3860a, 737, 3859a, 50.1-6846, 50-3863, 3865), *j* (50.1-993), *k-l* (50.1-5426, 3866), *m* (50.1-5463), *n-p* (50.1-3858a, 3868, 50-1774). Parfleches. *a-i*, *k-l*, *n-p*, Crow; *j*, Cheyenne; *m*, Hidatsa.

tic of any particular tribe but occurs "somewhat sporadically among almost all tribes." This typological grouping is followed in Kroeber's paper by a definition of tribal styles, in which due weight is accorded to the arrangement of patterns as well as to their geometrical character.

After going over the Crow specimens and comparing them roughly with those from other tribes, I have arrived at the conclusion that for purposes of characterization the combination of the geometrical elements into units of higher order and the method of arrangement of these units within the decorative area are of considerably greater significance than the use of such geometrical abstractions as rectangles and triangles. Kroeber himself realizes this when he points out that type III is less frequently shared by peoples with type II than by tribes with type I:

> The difference between the two types is not so much in their individual design elements as in the disposition of these in the decorative field.

Adapting or expanding Kroeber's nomenclature for my purposes, I will mainly employ the following self-explanatory terms for briefly describing the Crow parfleches: transverse border stripe, marginal border stripe, central hourglass, marginal obtuse triangle, bifurcating stripe, marginal half hourglass, central diamond, X figure, framed central triangle, laterally framed central rectangle.

Perhaps the most striking feature of Crow parfleches is the triple longitudinal disposition of patterns, which may culminate in a definite three-panel arrangement with a central figure flanked by symmetrical border stripes (Fig. 1).[1] Of twenty-five specimens only three represent a break with this traditional scheme; and even two of these exceptional cases may be plausibly conceived as mere variants from the familiar type through the addition of a transverse stripe above and below. A longitudinal arrangement is of course highly characteristic of the Arapaho, as noted by Kroeber, but with them the tripartite division is rare. Of the numerous specimens pictured by Kroeber only two[2] conform to Crow standards, five stripes being far more popular with the Arapaho than three. A consequence of this feature and of the tendency to leave large spaces unmarked is the relatively and absolutely lesser size of the Arapaho central figures. The designs of the Dakota are also markedly

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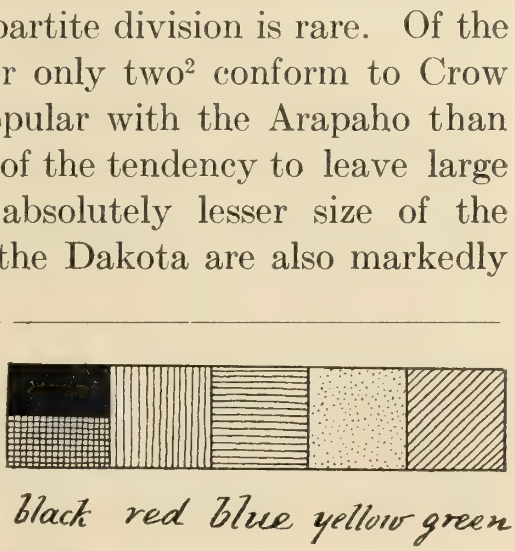
[1] The illustrations of objects published in this paper are the work of Mr. Rudolf Weber, whose color scheme is the following:



[2] Kroeber, A. L., 'The Arapaho" (*Bulletin, American Museum of Natural History*, vol. 18, part 1, 1907), Pl. XVIII, Fig. 1; Pl. XIX, Fig. 3.

smaller than those of the Crow, though not for precisely the same reasons. Their artists crowd the decorative field with painting, but the extensive use of borders limits the space available for the main designs and this area is often further diminished by halving, the tendency being to place one of a pair of figures in each half.[1]

In six Crow specimens the central position is occupied by a large hourglass figure, which is always divided by a longitudinal stripe. The hourglass may extend throughout the length of the decorative field (Fig. 1e), or it may only occupy the middle portion of the center, in which case there is a funnel-shaped expansion upwards and downwards to the limits of the painted area (Fig. 1d, h). The bisecting strip is generally crossed by transverse lines, which divide it into a series of narrow rectangles differentiated by leaving some blank and painting others, or by the use of distinct colors. In one pair of specimens the strip is not divided by horizontal lines but by two parallel slanting lines, the enclosed area being colored brick-red; similar but smaller areas are painted in orange in the funnel areas (Fig. 1d). Each triangular half of the funnel section is further subdivided into a larger triangular portion colored red and a smaller quadrilateral within which a central black area of only moderately isosceles character is flanked by two small blue triangles. Where the hourglass occupies the entire length of the field, its upper and lower portions are nevertheless set off by the use of a different color. Thus, in one specimen (Fig. 1n) the transverse lines dividing the bisecting strip are extended across the entire width of the figure and the lateral portions thus cut off from the core of the figure are painted yellow. In another case (Fig. 1e) the severed wings are blue, but enclose each a small triangle of the same color as the body of the hourglass. In none of these cases, however, is the unity of the hourglass impression seriously affected. So far as my personal reactions go, this happens more nearly in the parfleche with the oblique lines through the bisecting strip, and possibly to this fact may be ascribed the æsthetically unpleasing effect of this variant. Unfortunately I can only infer native agreement with my own feelings from the rarity of the device.

The hourglass occurs twice in a definite panel arrangement.

A large central X figure may perhaps be conceived as a variant of the hourglass. The design appears most prominently in a pair of parfleches (Fig. 1b). Each triangular half of the figure has the edges and base painted in blue, and blue lines further divide the remainder of the area into four parts. The area near the point of intersection of the two

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[1] See Wissler, *Decorative Art of the Sioux Indians*, Figs. 87, 90.

X-forming triangles is green. In the remaining quadrilateral the symmetrical lateral areas are yellow, the central quadrilateral is red and the rather irregularly drawn square it encloses is blue. In Fig. 1c is shown a rather unusual arrangement. The X-figure occupies the central panel, but owing to marginal border stripes and two large obtuse triangles in the panel itself the size of the central design is less impressive. The subsidiary elements are clear from the illustration. With the X designs I class the one appearing in a pair of parfleches (Fig. 1a), although the constituent triangles are separated by a narrow transverse band. However, the general impression is very similar and the disposition of obtuse lateral triangles (truncated of course in this case by the band) corroborates the relationship with the forms described above.

In four parfleches, two of which are mates, the dominant figure is a large diamond, which in the pair is bisected by a longitudinal stripe. In one specimen (Fig. 1o) there is a central transverse band enclosing two triangles; in another case a similar band is crossed by two vertical lines. In both parfleches a triangle runs to the boundary of the transverse band. In the specimen figured the apex is below that of the corresponding point of the enclosing half of the lozenge, while the base of the triangle coincides with the boundary. In the other specimen the apex of the enclosed triangle coincides with that of the half lozenge but its base extends only between the two vertical lines of the transverse band. Fig. 1f shows the subdivision of the half-diamonds by the use of different colors. The treatment of the longitudinal bisecting stripe resembles that discussed in connection with the hourglass figures.

Two parfleches might logically be grouped under the diamond category, but psychologically this seems inadmissible, or at least undemonstrable to me. In one case the central design is a figure with longitudinal bisecting stripe that may be conceived as a relatively small diamond expanding into a funnel upward and downward. Unlike the corresponding hourglass case this seems to me wholly to alter the psychological character of the design; owing to the relative proportions of the elements it would be quite as plausible to conceive it as a double hourglass. In the second parfleche the central section, instead of being occupied by one large diamond is decorated with two small ones, one above the other. These two specimens, while differing from others, seem to me to correspond more closely to the Crow style than a third (Fig. 1i) displaying an hexagonal figure in the central panel. The vertical sides are considerably longer than the others and the area bounded by them encloses a number of smaller designs set off by different colors.

An important type, from a comparative point of view, is exhibited by four specimens. The one illustrated in Fig. 1p breaks most definitely with the Crow tradition in having no semblance of the tripartite decorative field. The center is here occupied by a framed rectangle, which encloses two triangles conceivable as half-diamonds separated by a longitudinal stripe. The frame furnishes the base for lateral isosceles triangles. From the top and bottom respectively there extend three V-shaped figures with their apices touching the frame. The entire decorative area is framed. In a pair of parfleches (Fig. 1g) there is a central framed rectangle bounded by a broad transverse border stripe above and below. The rectangle encloses two homologous lozenges, the smaller one being traversed by a central band enclosing a small triangle. Another parfleche has apparently been turned inside out since only the inner sides of the flaps exhibit ornamentation, now rather faded. The arrangement resembles that just described, inasmuch as there are broad transverse border stripes and a lozenge-enclosing central rectangle, which, however, is framed only laterally.

From a consideration of the central designs I will now pass on to a discussion of the marginal areas. Those definitely paneled off from the center, whether in longitudinal or transverse bands, will be treated first. Fig. 1c shows unusually narrow longitudinal border stripes divided into rectangles, and recalling the bisecting stripe of the central design in other specimens. A very characteristic element occurs in four parfleches. The lateral panel is divided into three rectangles, the central one being much the largest and enclosing a large obtuse triangle. The decorative unit may then be conceived as such a triangle flanked above and below by a square or rectangle. On the other hand, since the apex of the triangle does not touch the inner boundary of the panel, it leaves a K-figure, which may be assumed to have independent decorative value as it is set off by a distinct color (Fig. 1n). It will be noted that this marginal motive is combined both with the central hourglass and the diamond design. The obtuse triangle without flanking squares occurs in the pair of specimens with the central framed rectangle (Fig. 1g). In the decidedly wide transverse borders of these parfleches there is a half hourglass lying on its long side and separated from it by a blank space an obtuse triangle. The other specimen of this category (50.1–3866) has a pair of homologous obtuse triangles in each lateral panel, but their apices point away from the central figure. On the other hand, the large obtuse triangles of the transverse bands point towards the center in the usual fashion; they include minor triangular designs. Finally, the unusual central hexagon (Fig. 1i) is coupled with lateral panels in which a half-hourglass is placed so that its vertical side coincides with the outer edge of the panel.

Turning now to those specimens in which the lateral figures are not paneled off, we find one pair (Fig. 1f) in which half-hourglasses are arranged as just described; the upper and lower sections of the figures are segregated by transverse lines and enclose small triangles. The majority of the other pieces of this category have large centripetal obtuse triangles, one on each side, so that this arrangement must be reckoned characteristic of the Crow style. In one case, that of the double-funneled diamond in the center, there are two triangles on either side, their lines running parallel to those of the central figure. Such parallelism also characterizes the parfleche with the two central diamonds, but here the lateral figure marked off consists of a central obtuse triangle flanked by smaller right-angled ones. The centripetal marginal triangle may enclose not only lesser triangles sharing its apex but also some other designs. Thus a narrow quadrilateral strip is several times cut off along the outer edge and subdivided by horizontal lines (Fig. 1h). In another instance (Fig. 1e) the triangle contains a square at the edge flanked by a right-angled triangle above and below.

The preceding analysis enables us to offer some comparative remarks. While previous investigations of other aspects of culture warranted the expectation that some definite relationship with the Arapaho style might come to view, the expectation remains unfulfilled. As I have already pointed out above, both the general arrangement of the patterns and their size vary in the two tribes, and the characteristic minor features of Arapaho ornamentation, such as the dots and the bear-foot motive, are wholly absent among the Crow. There is as little resemblance of Dakota and Crow decoration. The Dakota method of dichotomizing the ornamental area, of framing it in its entirety, of enclosing a pair of bars within a lozenge, is quite foreign to the Crow.

It would be natural to assume a peculiarly intimate relationship between the Crow and the Hidatsa styles, but the diametrically opposite condition obtains. Not a single Hidatsa parfleche resembles any one of the Crow specimens: arrangement of the decorative area, size of patterns, minor features all differ fundamentally. The Museum has seven Hidatsa parfleches and I will class with these a Mandan piece from the U. S. National Museum of which Professor Boas has kindly lent me a sketch, and another in the American Museum's Audubon collection. In six of these cases the general arrangement conforms to the Dakota pattern. That is to say, the field is divided into two panels, each of which is dominated by one design (Fig. 1k). This, naturally enough, does not approach in size the central figure of the Crow tripartite scheme. In the one instance of something resembling the Crow three-panel system (Fig. 1m) the resemblance proves, after all, superficial. For each lateral panel is not filled with one connected complex of elements, but with two dissociated designs, making after all five instead of three longitudinal divisions. Another trait appearing in this specimen and very common with the Hidatsa, but almost wholly lacking among the Crow, is the use of curved lines. For example, isosceles triangles tend to have curvilinear sides, and so do hourglass figures. Various minor devices find no parallel in Crow art. Thus, there is one piece with a vertical row of dots in a bisecting stripe; in another a curved hourglass is cross-hatched; in three instances there is a heavy border around the entire decorative field. The Mandan piece in the Audubon collection has five longitudinal designs. A central strip bisects the field longitudinally and divides the two halves of two diamonds, one above the other. On each side of this central double lozenge is a double-funneled diamond and at the edge is a combination of two elongated, centripetal obtuse triangles. On the basis of material available I do not hesitate to say that no two parfleche styles differ more than those of the Hidatsa and Crow.

Elsewhere I have described four Assiniboin parfleches,[1] with which I am now able to consider a fifth. Four of these have a distinct frame round the decorative field; an equal number have the area divided by a longitudinal stripe so that two panels result, which are ornamented with symmetrical patterns. The arrangement is thus distinctly of the same type as that of the Dakota and Hidatsa. The figures themselves exhibit considerable variety and without a larger series it is impossible to indicate their exact relationship.

Professor Kroeber, in dealing with the Gros Ventre parfleches, suggests the possibility of a close correspondence with the Crow style,[2] but the pieces described and figured by him do not indicate more than a very moderate resemblance. The specimen illustrated in his Plate XI, Fig. 3, comes nearest to the Crow method of decoration and, as he points out, is in the Shoshoni style.

For sketches of parfleches from two of the most important tribes for our purpose, the Kiowa and the Cheyenne, I am indebted to Professor

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[1] Lowie, Robert H., "The Assiniboine," (*Anthropological Papers, American Museum of Natural History*, vol. 4, part 1, 1909), 23.

[2] Kroeber, *Gros Ventre*, 176 f.

Boas. His three Kiowa specimens share the tripartite arrangement of the Crow, yet this cannot be taken as proof of close connection, which is negatived by the character of the designs employed. Neither the central nor the lateral patterns conform to Crow standards, and a frame extending in all Kiowa specimens round the decorative area finds only a single Crow parallel. The central figure is not the familiar large hourglass or diamond of the Crow. In one case there is a rather small hourglass (not extending to the border) with concave sides and three prongs above and below. The lateral designs might be conceived as centripetal obtuse triangles, but they are narrower than the Crow equivalents and differ fundamentally in having concave sides, besides enclosing distinctive minor motives. The two other parfleches resemble each other closely without being mates. Both have the framed area bisected by a longitudinal stripe, which however does not destroy the unity of the central pattern it divides into symmetrical halves. It may be easiest to describe the half-design. In one parfleche it consists of a very small central half hourglass with concave side, and this figure is touched above and below by the apex of a narrow right-angled triangle of which the base coincides with the inner line of the frame. The two halves with the bisecting stripe thus form a central hourglass, low and relatively wide, with a funnel above and below. The other parfleche has a still lower and relatively broader central hourglass, which however is not curved on the sides, but angular, so as to suggest two M's respectively swung ninety degrees to the left and right from an upright position. While the little hourglass is angular, the right-angled triangles flanking its halves have slightly curved hypothenuses. The lateral designs of the two parfleches are also similar. In each case a small centripetal isosceles triangle is flanked by right-angled ones with hypothenuses projecting towards the center of the field. In one specimen these flanking triangles touch the little triangle they flank; in the other they are connected with it by short stems.

Professor Boas's sketches of six Cheyenne pieces show the invariable framing of the decorative field in contrast to the Crow practice; this feature also occurs in one of the only two specimens in the Museum (Fig. 1j), where the border effect is distinctly similar to that observable in an Hidatsa parfleche. None of the Cheyenne parfleches are definitely of the Crow type. My impression coincides with Professor Kroeber's, viz., that the Cheyenne fall into the same category as the Arapaho and the Dakota, though their relationship with the former seems much closer. The longitudinal arrangement with a tendency to a fivefold division of the field, the occasional employment of curved lines, the use of such specific devices as the pronged "bear-foot" pattern and rows of dots, all point in the direction of Arapaho relations.

The Blackfoot style has been defined by Professor Kroeber, and I have reëxamined the specimens in the Museum for the present purpose. The result is again a negative one as regards any intimate connection with the Crow. The frequent framing of the field, the common dichotomy of the decorative area with like designs in the panels thus formed, and the use of curved lines suffice to differentiate the Blackfoot from the Crow pieces. As a matter of fact, I can find only two cases in which there is marked similarity to Crow parfleches. Specimen 50–4469, with a framed central rectangle, extraordinarily resembles the Crow parfleche 50–1774; and 50.1–1087 is distinctly of the Crow style with its narrow lateral panels and large central hourglass.

So far as I can see, the closest relationship obtains between the Shoshoni and the Crow style. This conclusion of mine is corroborated by the impressions of Professors Boas and Kroeber, both of whom, when I showed them some Crow specimens, were at once struck with their Shoshoni-like appearance. The marginal border stripe that occurs in a number of Crow specimens is eminently characteristic of the Shoshoni, as Kroeber has pointed out. I found it in sixteen out of twenty-two cases. The framed central rectangle is likewise typical of the Shoshoni, the only difference consisting in the greater width of their rectangles as compared with those of the Crow. Still more important in my opinion is the general arrangement of patterns. The tripartite scheme is of course favored by the extensive use of two longitudinal border-stripes, and as among the Crow this feature is coupled with central designs of relatively considerable magnitude. Finally, a comparison of the Shoshoni specimens described and figured by Kroeber and myself[1] with those from the Crow reveals close resemblances of a specific character. One of my Shoshoni pieces duplicates in its central figure the Crow split diamond; another, the X-figure interrupted by a transverse band; and so forth. Such a Crow anomaly as the small parallelogram with two oblique sides within a bisecting strip (Fig. 1d) is also found among the Shoshoni. Of course, there are differences. Among others, the marginal stripe and the framed central rectangle are certainly more prevalent in Shoshoni art. But judging from the available evidence I am forced to conclude that in a grouping of the parfleche ornamentation of the Plains the Shoshoni and the Crow belong together.

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[1] Kroeber, *Gros Ventre*, 172 f., Pl. X, Fig. 1 and 2. Lowie, Robert H., "The Northern Shoshone," (*Anthropological Papers, American Museum of Natural History*, vol 2, part 2, 1909), 203–205.

Professor Boas's sketches as well as Kroeber's description of Sahaptin parfleches and Spinden's illustrations[1] show that in some respects at least the Sahaptin must be classed with the Crow and Shoshoni.

RAWHIDE BAGS.

The box-shaped rawhide trunks found among the Hidatsa and the Sauk and Fox[2] do not seem to occur at all among the Crow. But with other Plains tribes they share rawhide bags of rectangular shape, usually with envelope flap, and cylindrical medicine cases. There are also little containers, square at the bottom and sides and concave at the top.

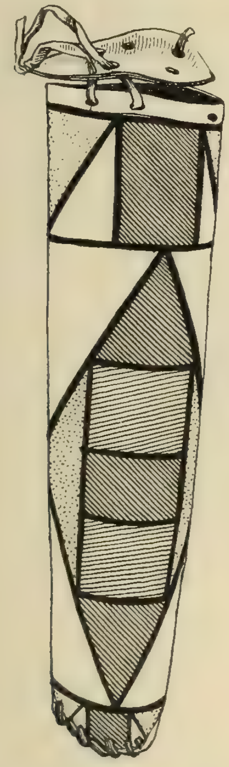

Fig. 2. (50.1-3882). Cylindrical Rawhide Bag. Crow.

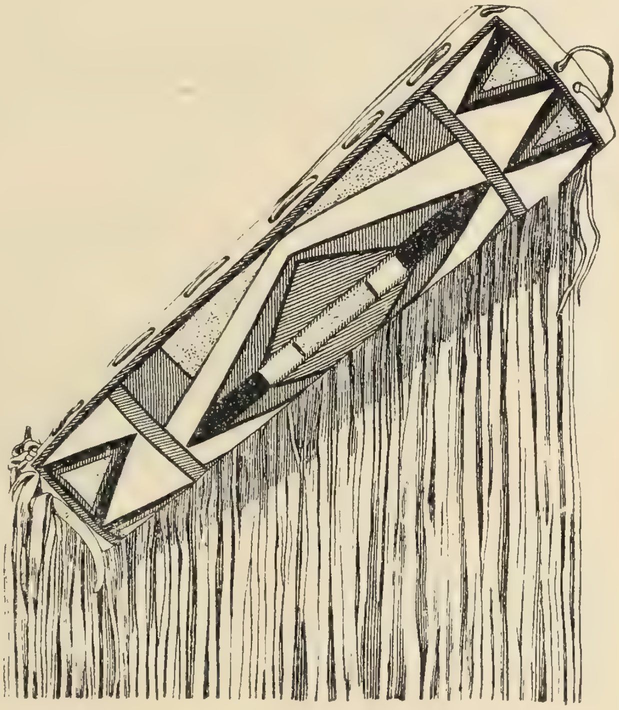

Fig. 3. (50.1-1261). Cylindrical Rawhide Bag. Crow.

Professor Kroeber distinguishes four types of ornamentation on the cylindrical bags of Plains Indians. From the specimens in the Museum it is clear that his third type predominates among the Crow, i.e., the one characterized by a central diamond flanked above and below by a centripetal isosceles triangle. In one case the dominant figure is a closed X, but the constituent triangles are of equal size. Kroeber's other styles are apparently lacking altogether. On the other hand, quite anomalous modes of decoration occur on two cylindrical bags in the Museum of the American Indian, Heye Foundation, which I had the privilege of inspecting through Mr. George G. Heye's courtesy. One of them displays a series of parallel zigzag lines above one-stepped rectangular designs with subsidiary features (No. 9156); the other has series of stemmed little circles, boxed X-figures and boxed little hourglasses (No. 2–330). In both instances the pattern is of course more elaborate than in the usual specimens, such as shown in Figs. 2 and 3, which are also represented in Mr. Heye's collection.

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[1] Kroeber, *Gros Ventre*, 175 f.; Spinden, Herbert J., "The Nez Percé Indians" (*Memoirs, American Anthropological Association*, vol 2, part 3, 1908), 209.

[2] Mr. Skinner tells me they also occur among the Kickapoo, Prairie Potawatomi, Plains-Ojibway, and Santee and that he has seen one or two unpainted Menomini specimens.

To the other forms of rawhide bag it would be rash to assign a distinctive style since the material is inadequate and exhibits much variation. Turning first to the rectangular containers we find a characteristic triangular pattern in the Sun Dance Doll envelope already illustrated elsewhere.[1] A similar design was also seen in the Museum of the American Indian, Heye Foundation,—in one case with a definite three-panel arrangement, the lozenge with centripetal triangles occupying the center (2–9621). Another piece in the same institution conforms to the three-panel scheme, but has a toothed concave hourglass in the middle (8776). Two bags in this collection are noteworthy as revealing the two-panel arrangement lacking in the Crow parfleches (8877, 5–773). A similar disposition occurs in a specimen in the American Museum of Natural History; in this case the field is bisected by a narrow longitudinal stripe with a wide diamond in each of the resulting panels. In another rawhide envelope the principal design resembles that of the Sun Dance bag, but the free points of the central diamond each touch those of a diminutive triangle. The flap of this specimen is decorated with two triangles, from the points of which hang two tiny triangles, base down. Of two rawhide

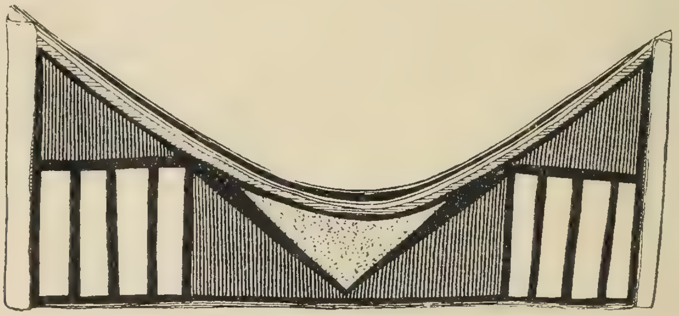

Fig. 4. (50.1-3874). Small Rawhide Container. Crow.

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[1] Lowie, Robert H., "The Sun Dance of the Crow Indians" (*Anthropological Papers, American Museum of Natural History*, vol. 16, part 1, 1915), 17.

bags for medicine rocks, the field of one is divided into variously colored rectangles, a device also found in a rectangular bag of different character; the second has for its dominant figure a longitudinally bisected diamond. A Tobacco bag with vertical stripes alternating with rows of dots has been figured elsewhere.[1]

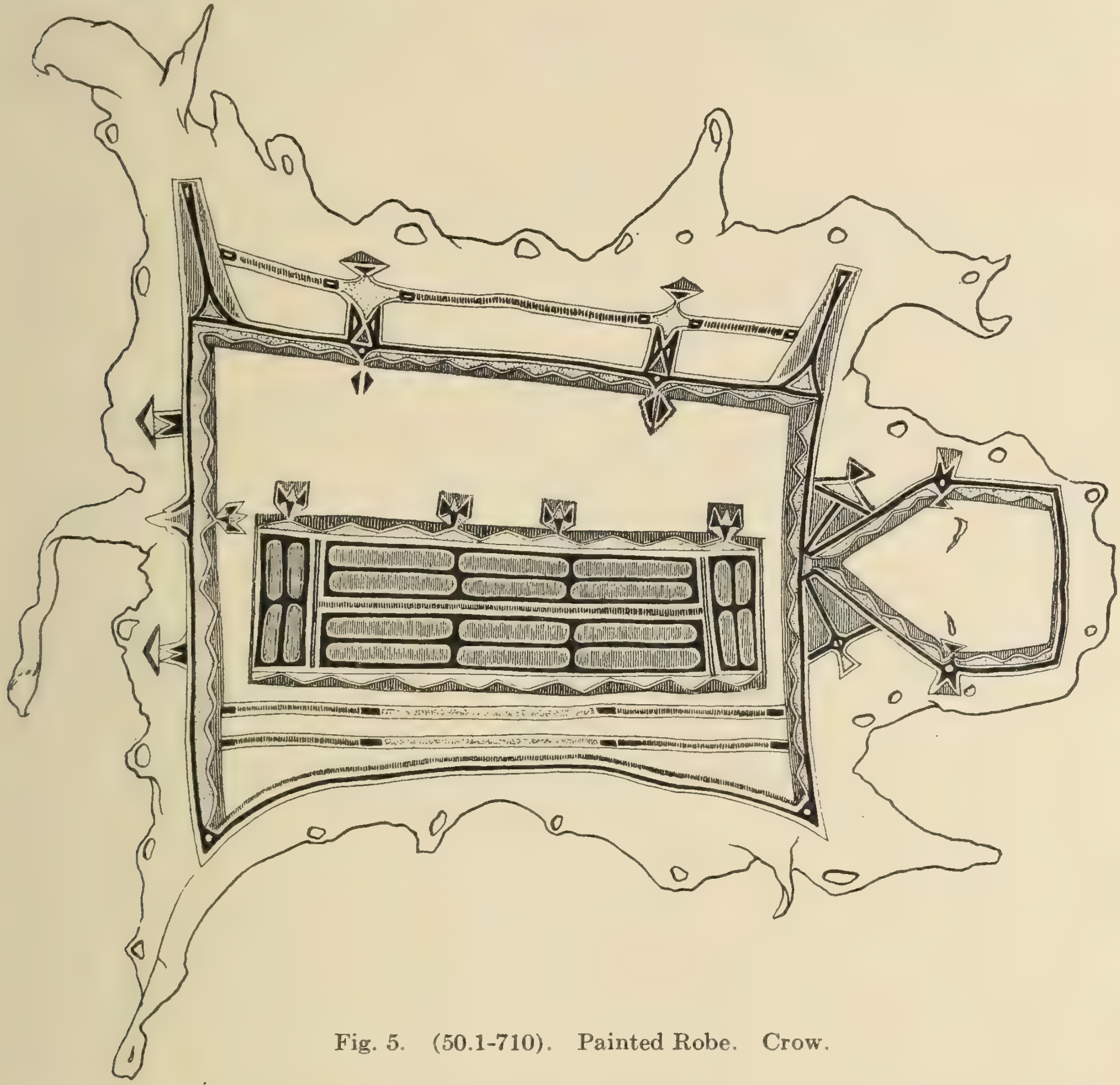

Fig. 5. (50.1-710). Painted Robe. Crow.

The small concave-topped type of bag is represented by a single specimen in the Museum (Fig. 4), but I have seen like pieces in the Field Museum and the Museum of the American Indian, Heye Foundation.

ROBES.

The Museum has one painted calfskin robe (Fig. 5) from the Lenders collection. In general impression, as well as in many details, such as the borders of triangles, it is remarkably similar to a Dakota specimen figured by Dr. Wissler as a typical woman's robe.[1] The resemblance is certainly stronger with this Dakota piece than with two Hidatsa robes in the Museum's collection. Nevertheless the principal design is by no means identical with that of the Dakota, a uniformly oblong figure rounded at the short sides being substituted for the alternatingly wedge-shaped and lenticular forms of the Dakota rectangle.

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[1] Lowie, Robert H., "The Tobacco Society of the Crow Indians" (*Anthropological Papers, American Museum of Natural History*, vol. 21, part 2, 1920), 160.

EMBROIDERY.

An informant said that unlike the Hidatsa and Dakota the Crow never used bird-quill embroidery, using instead exclusively porcupine quills (*apā̆ri isúə*) and later, beadwork. This work was of course done entirely by women. Some women were regarded as experts and others would come to them for advice about the colors to be used.

The style of ornamentation in beads and quills varies considerably for different types of objects. Hence it will be considered under corresponding captions.

Pipe Bags.

The Crow pipe bags consist of four divisions,—the plain buckskin fringe, the quill-wrapped fringe of rawhide slats immediately above it, the heavily embroidered section, and the top piece, which is for the most part of plain leather but usually has marginal stripes of beadwork with occasionally small designs above the main decorative field. The solidly embroidered section usually varies in design on the two sides and differs considerably in extent on different bags. Its minimum height is 2 inches, its maximum 10 inches, but in no case does it encroach completely on the top piece, as in some Dakota and Cheyenne specimens, where the beadwork extends from the fringe to the opening of the pouch. Ancillary ornamental devices include pendent tin cones with hair or plumes, and quill-embroidered discs.

Dr. Wissler has shown[2] that the pipe bags of the Plains conform to two main types,—those with four ear-like flaps at the top and a plain fringe at the bottom; and those without flaps and with a double fringe, the upper consisting of strips of quill-wrapped rawhide.

The former type is represented by the Blackfoot and Sarsi. In the Field Museum I once noted some Crow samples of this form, but as will appear presently they do not correspond to the tribal style. Of the Plains-Cree pieces in the American Museum all but one conform to the Blackfoot standard, including an old bag catalogued as coming from the Northwest Territory and another collected by Mr. Skinner in Saskatchewan. Outside this culture area the flapped single-fringed pipe bag occurs among the Cree near James Bay and among the Ojibway. Dr. Goddard collected a Wichita piece of this category, which raises an as yet insoluble problem of diffusion.

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[1] Wissler, *Decorative Art of the Sioux*, 246.

[2] "Material Culture of the Blackfoot Indians" (*Anthropological Papers, American Museum of Natural History*," vol. 5, part 1, 1910), 70–72.

The flapless type is characteristic of the Dakota, Crow, and Cheyenne. The much less abundant material in the Museum from other Plains tribes also belongs to this class, as does an Omaha pouch pictured by Miss Fletcher and Mr. La Flesche.[1] A Kiowa specimen presents an anomaly in that it lacks the quill-wrapped rawhide fringe, for which are substituted pairs of intertwined buckskin strings falling down separately to form the lower part of the fringe. However, this feature in no way suggests the Blackfoot style. It is a fair inference, then, that apart from the Wichita anomaly the Dakota variety is predominant in the Plains, yielding to the Blackfoot form only in the extreme northwest. It is even possible to assume that the style of which the Blackfoot are in recent times the most conspicuous followers was introduced into the area by the Cree.

Turning now to the method of ornamentation, we find that floral designs of the pattern usually associated with Woodland art appear among the Ojibway and Cree, but not to the exclusion of others among the latter. The Plains-Cree specimens sometimes exhibit the stepped triangles so common in Blackfoot art; and one bag from the Lenders collection is decorated on both sides with a pair of elk, recalling a single representation of this animal on a Blackfoot pouch. The typical Blackfoot ornamentation seems to be shown in Wissler's figure,[2] which illustrates a series of stepped diamonds. Stepped patterns are also prominent on Sarsi bags.

The decoration of the flapless bags differs from the above in a number of significant features. As Wissler points out, the main decorative field is larger than in the Blackfoot type. Further, the patterns are frequently of a more complicated type, and in a distinct majority of instances there are auxiliary decorative elements in the top-piece of the bag that are lacking in the other form of pouch. Most noticeable among these is the lateral stripe running along each edge from the main field to the mouth of the bag. Dr. Spier and Miss Weitzner plausibly suggest that one of these is designed to cover the seam, the other presumably being put on for symmetry. When holding one of the pouches flattened from use in his hand, the bearer would in most cases see only the stripe on one margin, that on the opposite edge appearing on the reverse to a person facing him. In a number of cases the two marginal bands are so wide that they are simultaneously visible from both sides. These wider strips harbor, perhaps more frequently than any other single motive, a series of small rectangular crosses. I have noted these marginal crosses on Crow, Cheyenne, Dakota, and Arapaho bags; a piece in the Lenders collection credited to the Shoshoni exhibits the same decoration. In a Cheyenne pouch obverse and reverse both bear, in addition to the unilateral marginal stripe, a similar central stripe.

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[1] "The Omaha Tribe" (*Twenty-seventh Annual Report, Bureau of American Ethnology,* 1911), Plate 42.

[2] *Material Culture of the Blackfoot,* Fig. 35.

Another subsidiary feature of the flapless type consists of small motives in the portion of the top piece immediately above the main decorative area. These designs include the feather pattern, two or more inverted V-figures, isosceles triangles standing on their apices, and combinations of such simple designs. In this form of bag there is also generally a much more substantial border of beadwork round the mouth.

The Museum has a sufficient number of bags from the Dakota, Crow, and Cheyenne to warrant some comparative statements. It is clear that the style of bag decoration in these tribes has had a single origin. However, I gain the impression that the relationship is definitely closer between the Dakota and the Crow than between either people and the Cheyenne, though in some respects these share features exclusively with one or the other of these neighboring tribes.

The following points seem to me noteworthy in connection with the available Cheyenne bags. There is a distinctly lesser fondness for white backgrounds than among the Dakota and Crow. On the whole the total patterns are of a simpler nature and the design elements themselves seem fewer. A feature occurring at least twice, and so far as I know lacking on Dakota pouches and all but one Crow piece, consists in a central stripe on the top piece in addition to the usual pair of marginal bands. In several instances (e.g., Museum specimens, 50.1–608, 50.1–601) the decorative field is divided into three panels, an arrangement recalling the Crow parfleche decoration, but lacking on Crow pipe bags; in one Cheyenne bag the design in the lateral panels is a K-figure, typical of rawhide decoration. The spreading motive appears in a form identical with that of the Crow. Two pouches, otherwise of the Dakota-Crow type, have no rawhide fringe.

In view of the considerable range of variation found in any one tribe, the resemblances between Dakota and Crow pouch designs are very striking. The treatment of the decorative area by the Dakota conforms mostly to one of three methods. There may be, regardless of minor features, a dominant central pattern or single design complex.[1] Secondly, there may be duplication of a pattern, each sample occupying an imaginary panel. In some instances, the intervening space is occupied to varying extent by minor elements.[2] These may become so obtrusive as to suggest an intermediate panel, leading in a few cases to the third style, a definite three-panel arrangement.[3] Of these three methods the last-mentioned does not appear among the Crow in its full-fledged form, but duplication is sometimes found with intermediate figures of lesser dignity. (Fig. 6.) On the whole, there is preference for the dominant central design or complex (Fig. 7a), of which the unity is hardly broken in those few cases where a transverse band intervenes between the upper and the lower half of the pattern (Fig. 6). A very unusual variant is shown in Fig. 8a. The middle of the area is on either side occupied by a rather typical Crow-Dakota pattern, but to the left and the right of it there is a lateral pattern of which only half is visible when one faces either the obverse or reverse. In order to see all of this design it is necessary to distort the bag out of its natural shape. Since at any one time only one complete complex pattern is visible, I conceive this specimen as a deviation from the central-design type. As an arrangement different from that of the bags hitherto described may be mentioned the use of four small designs of uniform character, each in one of the quarters of the field (Fig. 7e); in another specimen the idea is the same but the design multiplied is not the box but an angular horseshoe (Mus. specimen 50.1–697). A similar conception is seen in a Dakota bag pictured by Wissler[4] and in some Cheyenne pieces.

Except for the three-panel system, then, the general arrangement of the designs is shared by Dakota and Crow. But there are more specific resemblances. If we analyze the patterns of the Crow and Dakota pipe bags into their constituents, very much the same figures are seen to predominate,—the forked and the stepped designs, the box, the diamond, and the cross. The pronged design, however, seems to be noticeably more frequent among the Dakota. This corroborates Kroeber's state-

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[1] Wissler, *Decorative Art of the Sioux*, Pl. XLII, 1; XLIII, 2; XLVII, 1, 4; XLVIII, 1.
[2] Wissler, *Decorative Art of the Sioux*, Pl. XLII, 23; XLVII, 2.
[3] Wissler, *Decorative Art of the Sioux*, Pl. XLIII, 3, 1; XLVIII, 2.
[4] Wissler, *Decorative Art of the Sioux*, LV, 1.

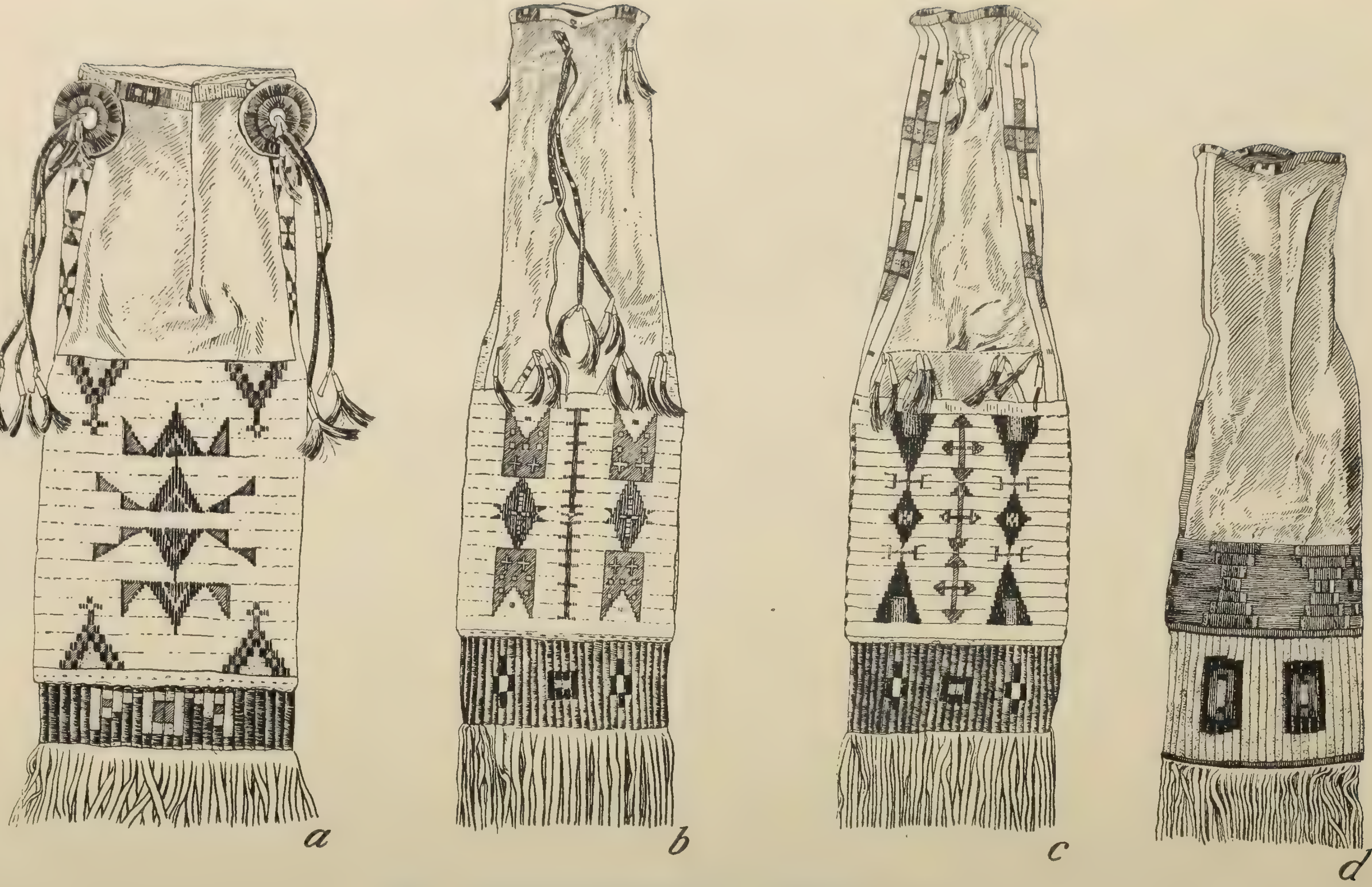

Fig. 6. *a-d* (50.1-694, 6835a, 701). Pipe Bags. Crow.

ment as to the preference of Dakota and Assiniboin for this feature in all their beadwork.

The combinations of these elements into designs of larger order likewise reveal a good deal of coincidence. Sometimes there is a middle figure with symmetrical designs above and below and sometimes an additional couple of symmetrical designs, one to the right and the other to the left of the central design. The main pattern of Fig. 6c, e.g., is very similar to that of a Dakota piece (50–6284). In both there is a central diamond with superior and inferior triangles enclosing a rectangle each. Some subsidiary features accentuate the resemblance, for corresponding to the double pronged design between the diamond and the triangles the Dakota pouch has stemmed forked designs producing approximately the same effect. Another Dakota bag lacks these accessories, but approaches the Crow piece more nearly in the relative proportions of the central design and its processes.[1] Another characteristic pattern is shown in Fig. 8a. It consists essentially of a central diamond with a superior and inferior forked design. Except for the colors it can be readily matched by Dakota pieces, even in subsidiary features. Thus, in two Dakota pouches the central diamond encloses a rectangular cross, and on one of them diminutive triangles appear near the apices of the forked designs, though not in contact with them. A more complicated variant has been figured by Wissler, and the general popularity of the conception among the Dakota is proved by its appearance on quite different types of objects such as strike-a-light pouches and leggings.[2] In the leggings the interposition of a rectangular cross between the central diamond and the forked designs merits attention, since it adds a point of likeness to the Crow piece.

In other instances the resemblance, while not extending to the entire pattern, holds for an integral part of it. Thus, the symmetrical spreading designs of specimen 50.1–702 are very nearly duplicated in an Oglala bag (50.1–446). So the triangle with a pair of spreading little triangles at each side, seen in Fig. 6a, appears clearly, though in a subordinate way on a Dakota bag.[3] Another Crow bag exhibits a very close approximation to the innermost pattern of the same Dakota specimen, the prongs being replaced by little centrifugal triangles.

Sometimes the dominant pattern is of a simple character, as illustrated in Fig. 7c. Something comparable occurs on a Dakota bag,

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[1] Wissler, *Decorative Art of the Sioux*, Pl. XLII, 2.
[2] Wissler, *Decorative Art of the Sioux*, Fig. 99; Pl. XLI, i; LI, 1, 2.
[3] Wissler, *Decorative Art of the Sioux*, Fig. 100.

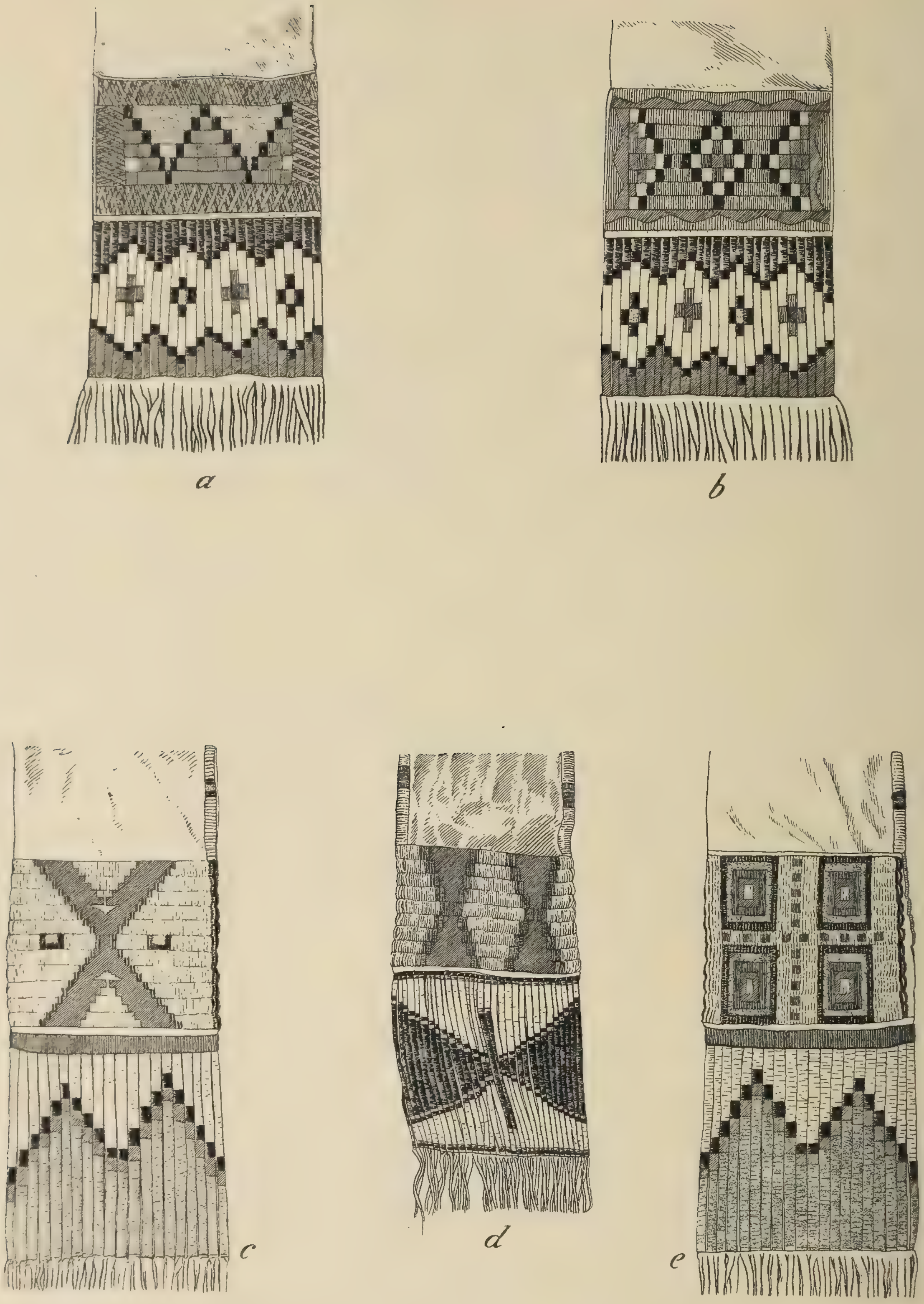

Fig. 7. *a-e* (50.1-5438, 700, 7506, 700). Pipe Bags. *a-b*, Hidatsa; *c*, Crow; *d*, Dakota; *e*, Crow.

though the details and the coloring differ.[1] On the other hand, the reverse of this Crow pouch (Fig. 7e) presents a conception certainly not characteristic of the Dakota, to wit, the multiplication of a simple unit, in this case the box designs. On another Crow specimen (50.1–697) four angular horseshoes take the place of the boxes. A somewhat similar treatment of the decorative field appears on a Cheyenne piece, which displays six rectangular crosses. So far as I can see, a series of such small and simple figures is used by the Dakota only as ancillary decoration.

In a single instance, the reverse of the bag shown in Fig. 6a, there is a realistic representation, viz., a warrior wearing a bonnet and mounted on a horse. There is less spirit in this figure than in corresponding Dakota representations, but the general style is the same. I have not encountered any Crow bag with a figure of the elk, such as appears on Dakota, Blackfoot, and Cree bags in the possession of the Museum.

So far I have confined attention to the beaded pouches. The Museum also owns three bags with quill-worked designs. One of these has a red background from which a single box design stands out in relief. Another combines the red-line design with numerous small box designs in quills and beadwork. In both cases obverse and reverse are identical. The same applies to the third specimen (Fig. 7d), where two stepped hourglass figures alternate with lavender spaces in the shape of stepped truncate diamonds similar to the pattern on a Dakota bag.[2]

The design on this last-mentioned specimen should be compared with that on quill-worked bags from other tribes. An Hidatsa specimen of this category (Fig. 7a) has on one side a central stepped triangle flanked by symmetrical halves of itself; the intervening spaces are yellow-stepped triangles, apices down. On the other side the central figure is a stepped diamond and the lateral figures again represent the halves of the central unit, the intervening areas being of hourglass shape. An old pouch credited tentatively to the Bannock in our catalogues, with the additional remark that it is possibly Cheyenne (Fig. 8d) exhibits on both sides two similar patterns, each consisting of two centripetal stepped triangles separated by a bar. On still another bag, of unknown provenience, one side exhibits as its central figure a vertical line with four transverse lines crossing it, which pattern produces the effect of a series of rectangular crosses (Fig. 8c). On the other side (Fig. 8b) there are six stepped triangles, arranged in longitudinal trios, with three little rectangular crosses in the intervening space. One Dakota piece (Fig.

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[1] Wissler, *Decorative Art of the Sioux*, Pl. XLII, 1.
[2] Wissler, *Decorative Art of the Sioux*, Pl. LV, 2.

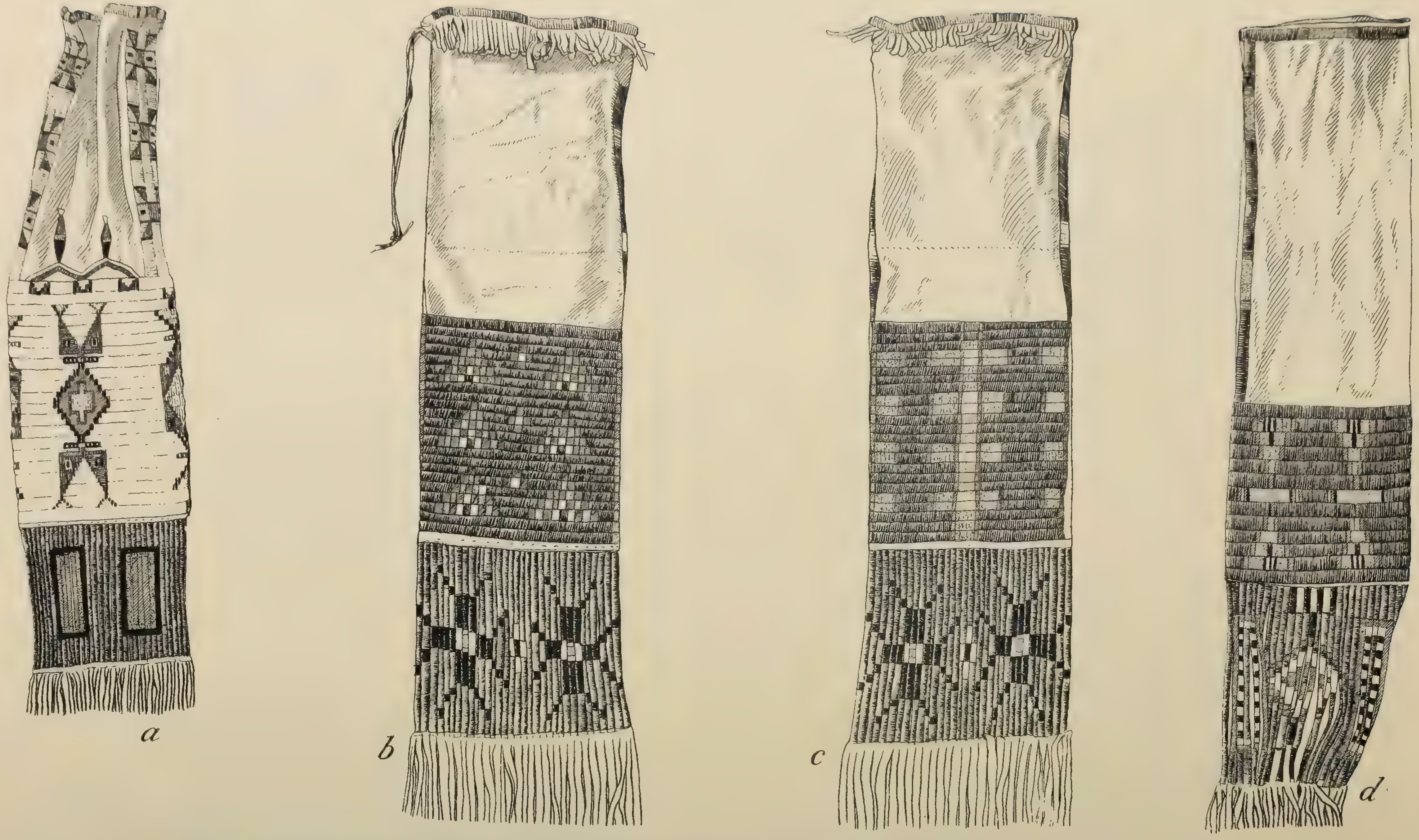

Fig. 8. *a-d* (50-6836a, 50.1-6326, 50-1176). Pipe Bags. *a*, Crow; *b-c*, unknown provenance; *d*, Bannock (?).

7d) presents a striking parallel to the Crow design of Fig. 6d. Two Dakota bags (Specimens 50.1–1205, 50.1–7505) exhibit anomalous figures, which in the former case are somewhat more elaborate than those previously described in this paragraph, but on the whole, the lesser complexity and restricted range of quilled, as compared with beaded, designs is very striking.

The quill-wrapped portion of the fringe frequently displays definite attempts at decorative designs. Stepped triangles (or other figures), rectangular crosses, and especially boxes, are probably the most conspicuous of these not only on Crow bags, but on all Plains Indian pouches of the flapless variety. For example, they are seen on available pieces from the Arapaho, Shoshoni, and Cheyenne. From this point of view, then, the Crow are no nearer to the Dakota than to other neighboring populations, but by and large it seems fair to consider their pipe bag ornamentation as bearing an especially close relation to that of the Dakota.

SOFT POUCHES.

One of the soft pouches in the collection conforms rather closely to an Arapaho specimen figured by Kroeber.[1] That is to say, the decoration consists essentially of a series of parallel horizontal lines in quillwork intersected at intervals by perpendicular lines of fluff representing feathers. The cover flap, likewise in Arapaho style, has beaded rectangular areas of one color enclosing bars of another, and the lateral ornamentation also presents much resemblance. This type of soft-bag decoration evidently has a very wide distribution among the Plains Indians. In one Crow specimen the fundamental idea is the same, but narrow bands of beadwork, each alternatingly light blue and dark blue in color, replace the quilled lines; the cover flap in this case has a narrow strip of beadwork without any special design. A third pouch exhibits considerable modification. Though the basic decoration still consists of parallel lines of quillwork, there is added a solid area of quillwork enclosing some stepped effects and topped by four more or less crescentic figures and little lanceolate forms (Fig. 9a). Finally must be noticed a pair of identically beaded bags (Fig. 9b). The cover flap resembles that of the first-mentioned pouch and its Arapaho analogue. The outer surface is completely covered with beadwork, with white for the ground color. From this background three complex patterns stand out in relief, the lateral ones being symmetrical. These are combinations of the forked

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[1] Kroeber, *The Arapaho*, Pl. XVI.

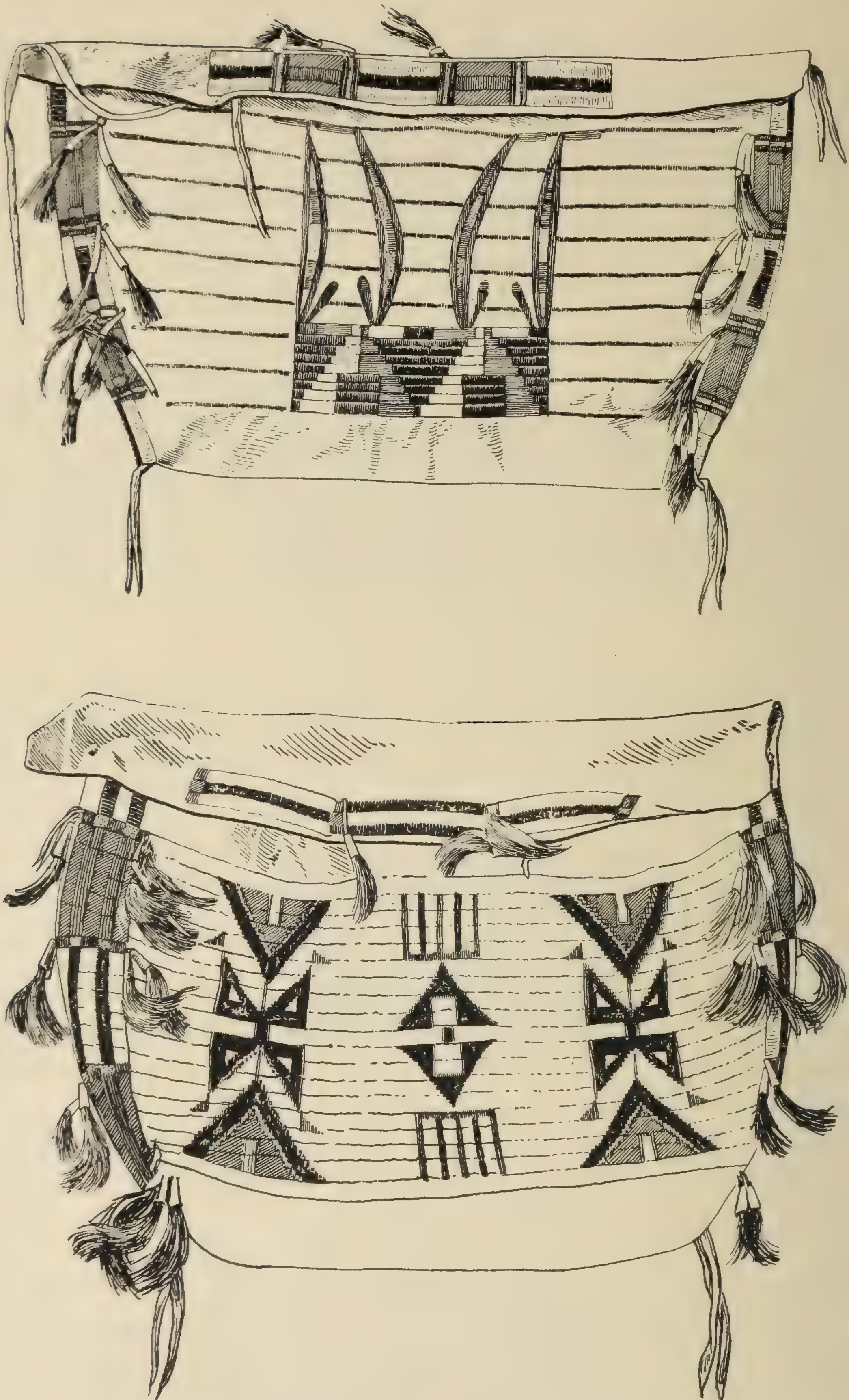

Fig. 9. *a, b* (50.1-706, 708). Soft Pouches. Crow.

design with what some Plains tribes call the tipi design. The central pattern is noteworthy because of its pronged extremities, a motive not common in Crow art. The rectangular cross in the middle of this pattern is white and its horizontal wings merge directly into the background.

CRADLES.

None of the Crow cradles observed exhibits the elaborate embroidery found among other tribes, such as notably the Dakota, nor have I ever seen them decorated in the style of the quill-worked cradles of the Arapaho.[1] In point of simplicity the Crow specimens rather recall those of the Blackfoot, which they also resemble in general outline.[2] In one of Curtis's photographs the head of a Crow cradle has a fairly elaborate floral design, but it is of obviously modern character.[3] The sides are merely decorated with series of triangles, from the base of which dangle three little triangles.

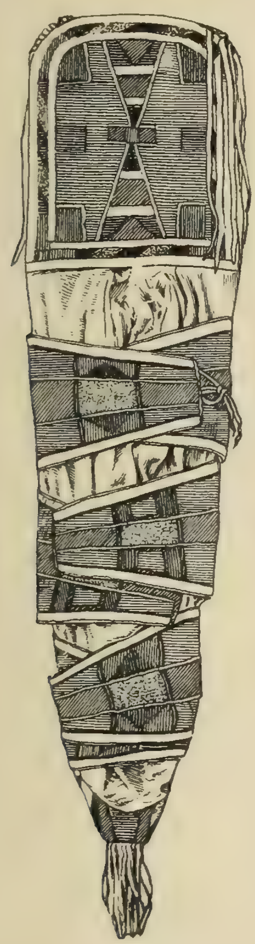

Fig. 10. (50.1-3909). Model of Cradle. Crow.

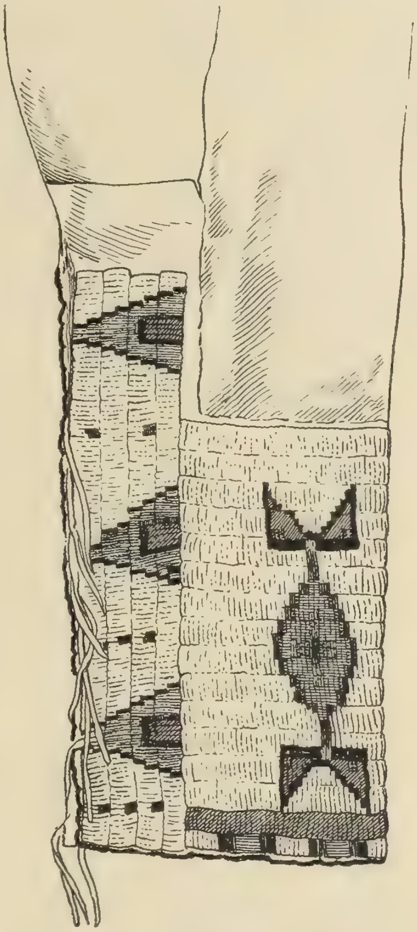

Fig. 11. (50-6849a). Legging. Crow.

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[1] Kroeber, *Arapaho*, 67.
[2] Wissler, *Material Culture of the Blackfoot*, 88.
[3] Curtis, Edward L., *The North American Indian*, vol. 4, facing p. 179.

Two models in the Museum show quite simple decoration on the flaps crossing the center of the cradle. The head and foot of the cradle cover are also beaded. The style of ornamentation is illustrated in Fig. 10. The triangles with approaching apices separated by a horizontal bar form a characteristic motive encountered on other objects.

CLOTHING.

The beadwork or quillwork on clothing is generally in relatively long and narrow stripes. In the old days a quilled rosette was very popular in the northern Plains, as is clear from Maximilian's Atlas. This element may stand alone or in combination with the quill-worked band, as we find it on a Crow robe in the Atlas. The same vignette shows a Crow shirt with a large rosette on the breast. In both cases the circle encloses a Maltese cross.[1]

The shirt just referred to exhibits another characteristic element, the ornamental strips on the sleeves, which display rectangular crosses. A quill-worked shirt (Specimen 50.1–655) in the Museum's collections has a U-shaped flap enclosing rectangular crosses, and there are the pair of breast and sleeve strips common in the Plains area.[2] These exhibit for their design a triplet of elongated isosceles triangles separated from a row of such inverted triplets by a narrow band. The use of elongated triangles in quillwork seems to have been widespread; it is found on Museum specimens from the Assiniboin, Hidatsa, and Pawnee.[3] Another Crow shirt has a square flap framed with white beadwork enclosing a few little triangles in blue; the framed area is traversed by several parallel lines of beadwork. There are again a pair of breast strips and of sleeve strips. These are solidly beaded with differently colored areas separated by horizontal bars, but no special pattern has been worked out.

The flaps on another specimen (Specimen 50.1–1249) are similarly framed, though without the little triangles. The framed area is solidly beaded, but, as in the previous case, there are three transverse lines. Breast strips and sleeve strips all present a single pattern, which is most readily understood from the illustration. A photograph of Hillside in gala dress reveals the decoration of the flaps and the breast stripe. The latter has for its principal decoration a central diamond with a centripetal isosceles triangle above and below. The flap is again framed and has

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[1] Maximilian, Prince of Wied, *Travels in the Interior of North America*, 1843) Atlas, vig. XIII.

[2] Wissler, Clark, "Structural Basis to the Decoration of Costumes among the Plains Indians" (*Anthropological Papers, American Museum of Natural History*, vol. 17, part 3, 1916), 102.

[3] For Hidatsa, see Curtis IV, picture facing p. 152.

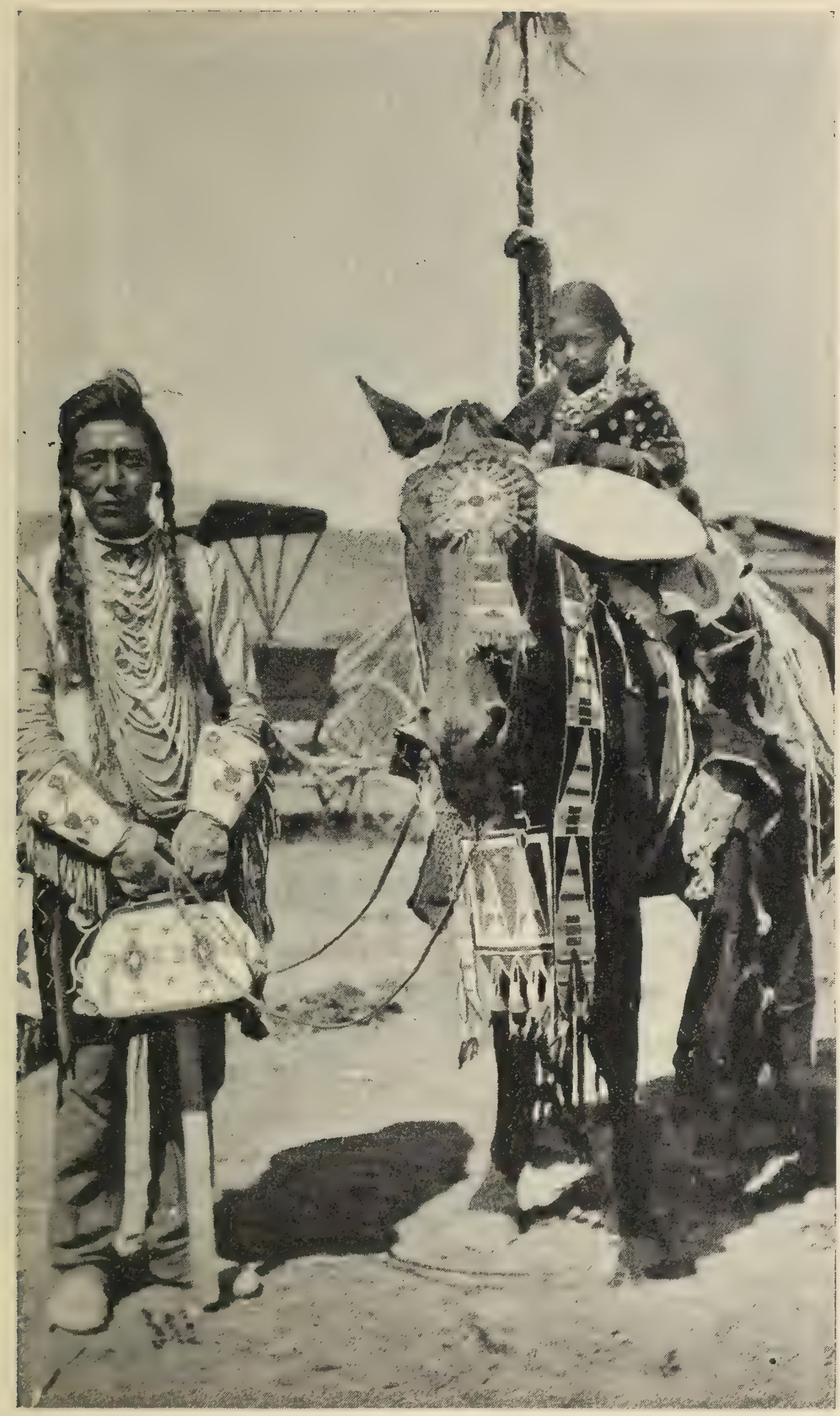

Fig. 12. Grasshopper and his Daughter.

several transverse lines extending completely across the framed area. In the space intervening between consecutive transverse lines are pairs of short horizontal bars.

The men's leggings sometimes bear a beaded or quill-worked stripe. A quill-worked specimen in the Museum collection has a series of stepped triangles set off from the solidly quilled area. On a beaded piece this pattern alternates with pairs of feather designs.

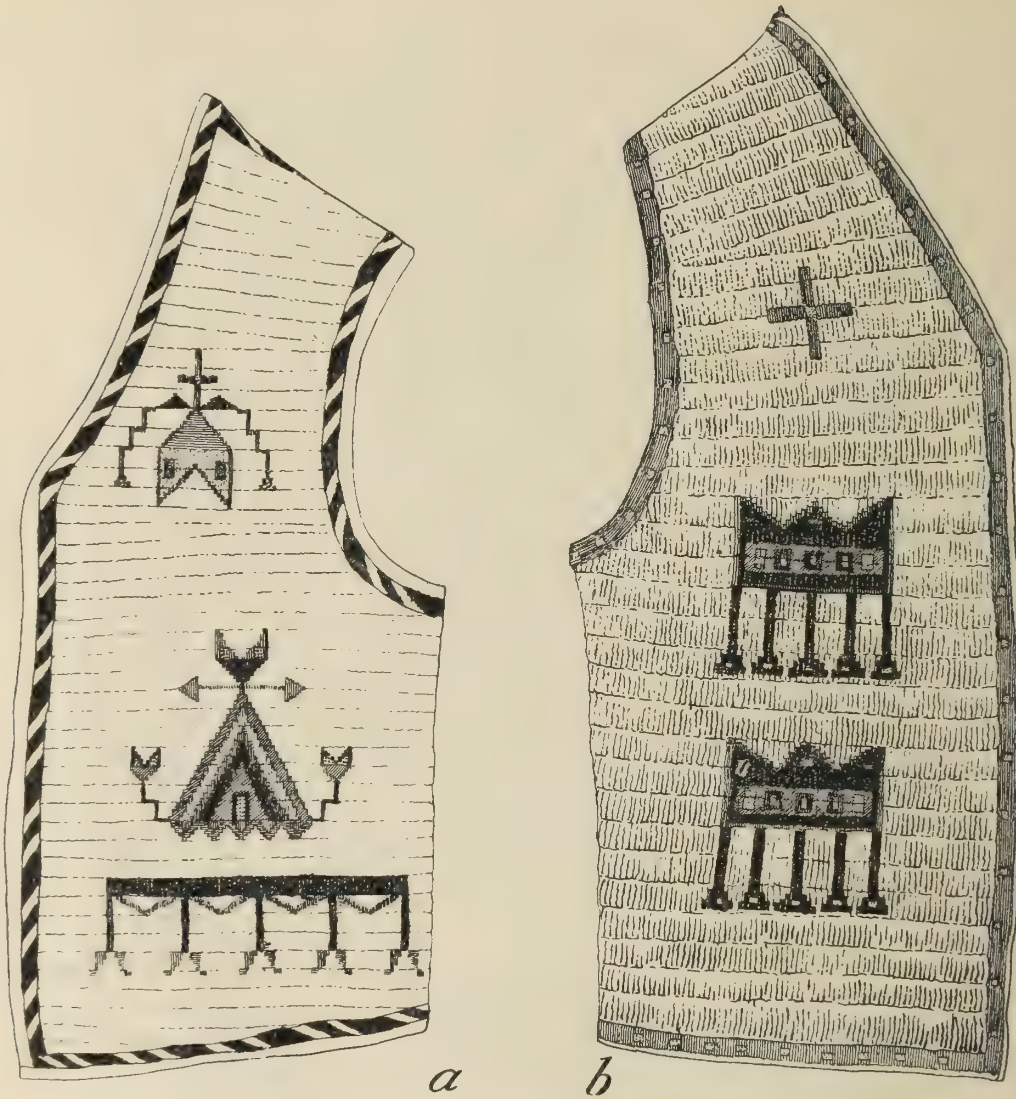

Fig. 13. *a*, *b* (50-6845, 6856). Beaded Vests. Crow.

War-bonnets display a narrow beaded zone along their lower edges. These exhibit stepped triangles or such triangles alternating with rectangular crosses. Similar motives appear in some of Curtis's Crow illustrations.

The women's dresses were beaded to only a very slight extent as compared with those of other tribes. Dr. Wissler has figured a typical

Crow piece and contrasted the meager beading round the neck and above the tail flap with the elaborate ornamentation of a Yakima and a Blackfoot garment.[1] As he points out, the moderately undulating zone of beadwork merely follows the contour of the yoke. I may add that the narrow neck zone of this piece has little obtuse isosceles triangles on a white background. Another specimen (Specimen 1–5391) has quill decoration consisting of a rosette on each shoulder and sleeve stripes displaying in part a checker pattern.

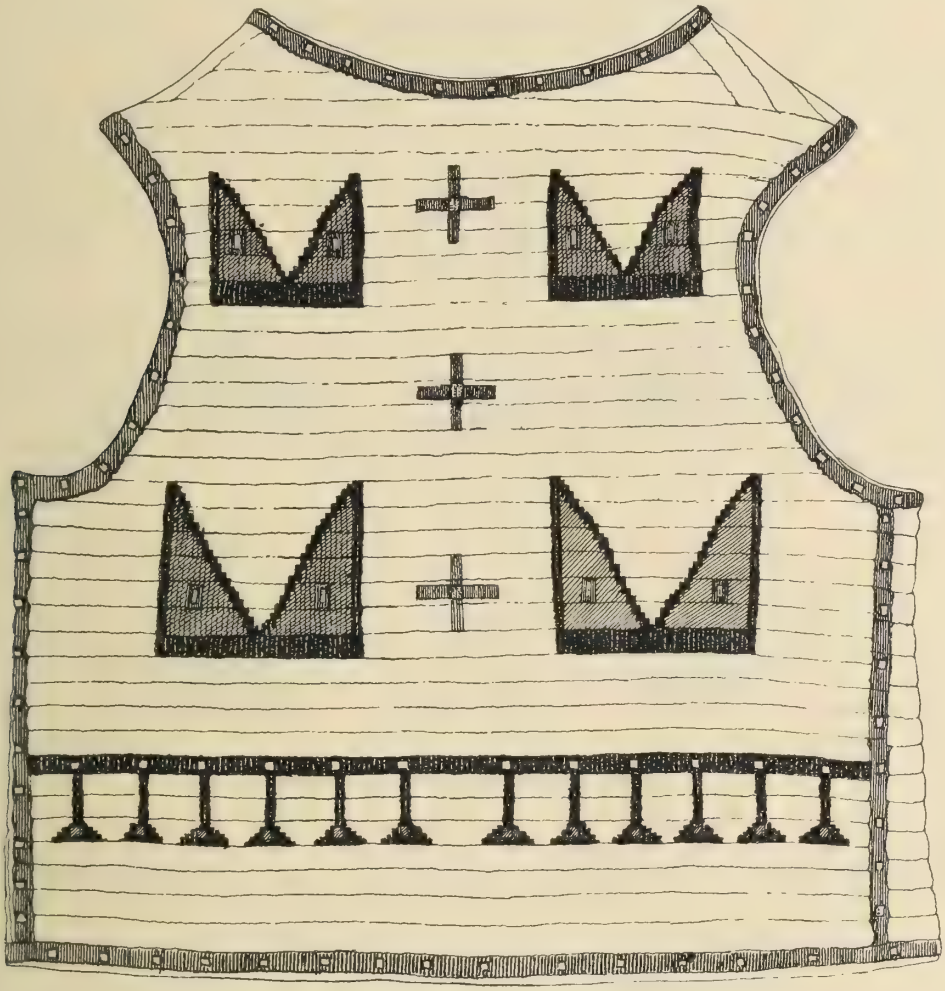

Fig. 14. (50-6856). Beaded Vest. Crow.

The buckled leather belts obtained from the traders are generally decorated with beads in differently colored rectangular areas. These may exhibit box designs or enclose triangles, alone or in combination.

The decorative surface on women's leggings is larger than on the types of garment hitherto considered. A pair in the Museum's possession (Fig. 50–6849A) is very decidedly of Dakota type, as may be seen by comparison with a specimen illustrated by Wissler.[1] There is as the dominant pattern of both a central diamond with a forked design above and below. The Crow diamond, however, encloses a rectangular cross lacking in the Dakota legging, and the line connecting the central figure with the forked designs is uncrossed. The Crow piece shares the separate lateral stripe of the Dakota specimen, but has a quite different ornamentation consisting of stepped triangles on a white background, in which respect it approximates Arapaho leggings.[2]

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[1] *Decoration of Plains Costume*, 99 f.

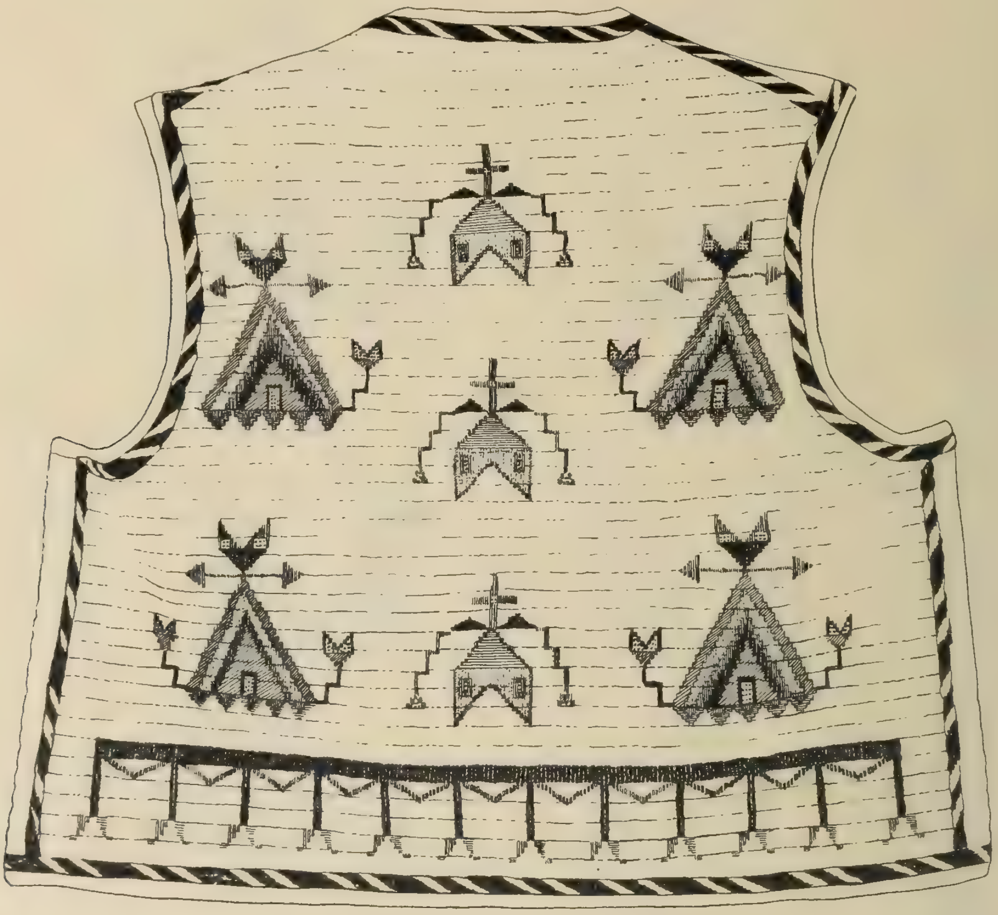

Fig. 15. (50-6845). Beaded Vest. Crow.

In dressing up for special occasions nowadays the dandies wear beaded cuffs. The floral design on Grasshopper's cuffs (Fig. 12) may be taken as characteristic, since very similar motives occur on those worn by Gros Ventre, White-hip, and a very young man when photographed on different occasions. There is of course no doubt that cuffs and decoration are both quite modern.

Though vests are of course also quite modern, the designs on two specimens are characteristic of the native style of decoration. In both the background is white. The specimen in Figs. 13b, 14 exhibits some resemblance to a Dakota waistcoat[1] in the use of the small rectangular crosses and the forked designs. The front designs suggest an Arapaho cradle decoration,[2] though differing in the peaked top. The crosses on this vest were said to represent stars; the five-tined figures, mountains. The long blue line with many processes ending in little triangles was not given any interpretation by the seller, but it resembles a design on the other vest to be noted presently.

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[1] *Decorative Art of the Sioux*, Pl. LI.
[2] Kroeber, *The Arapaho*, 48.

In Figs. 13a, 15 the large triangles were identified with medicine-lodges, the long lines with processes as medicine-pipes, while the remaining designs remained unexplained. From an objective point of view it is the occurrence of the spreading pattern and of the bar terminating in little triangles that merits notice. The latter motive, while not perhaps frequent enough to be regarded as a favorite device, is used by the Crow in various settings and may turn out to be fairly distinctive of certain tribes. Kroeber figures it in cross-form on an Arapaho toilet pouch.[3] The spreading pattern also occurs on other Crow specimens, e.g., the beaded belt shown in Fig. 16.

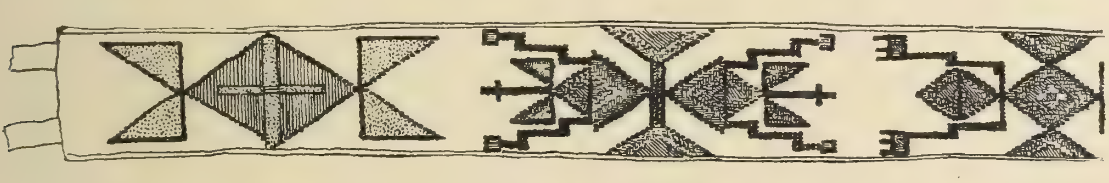

Fig. 16. (50-6842). Beaded Belt. Crow.

MOCCASINS.

Owing to the distinctive character of the decorative field in moccasin ornamentation, it has properly been discussed under a separate heading. I will reëxamine Kroeber's statements about the Crow style on the basis of the fuller material now accessible, using so far as possible his convenient terminology for design elements.[4]

Kroeber finds that in their moccasins, as in their beadwork generally, the Crow resemble both Blackfoot and Dakota. They use various designs, including the longitudinal stripe, the round-head, the angle-across, the red-line, and "the characteristic Blackfoot U-figure." The occurrence of the last-mentioned is especially significant because according to Kroeber it is nearly confined to the Blackfoot, being lacking even among the Gros Ventre, despite their long and intimate contact with the Blackfoot.

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[1] Wissler, *Decorative Art of the Sioux*, Pl. LVI, 2.
[2] Kroeber, *Arapaho*, 69.
[3] *The Arapaho*, 95.
[4] Kroeber, *Gros Ventre*, 156–161.

A rapid survey of the Crow moccasins in the Field Museum in 1910 led to the conclusion that the longitudinal stripe, with or without transverse bar and short parallel stripes, and the U-pattern with feather designs represent the most common styles. In the same summer I rather systematically noted the decorations on moccasins worn on the Reservation and soon satisfied myself that the U-design was decidedly the most fashionable. Usually it appeared with feather designs, which were sometimes topped with a curvilinear forked pattern. In some instances the U was very narrow. It occurred also in combination with a transverse stripe. Among other patterns observed in use the longitudinal stripe and the circular "club-head" were specially noted.

The specimens in the American Museum represent a considerable variety of styles. First may be mentioned the widely varying manner in which the available area is utilized. Some pieces exhibit merely a small figure on the vamp, many others have the vamp completely covered with embroidery, one pair having originally even had the sole completely covered with beadwork (50.1–682). As a matter of curiosity I mention the occurrence of painted sole decoration (50.1–686); presumably a rawhide bag had been cut up for the soles. In another pair the ankle flaps are almost wholly beaded, displaying a continuation of the vamp ornamentation (Fig. 17b). Even the tongue does not always escape embroidered decoration. In one case rather more than half an inch of the upper part of the tongue is beaded on the inside and so are two string processes, each tipped with tin cones holding little plumes (50.1–668). In the second example the tongue terminates in two oblong flaps, beaded on the inside, and provided with similar appendages (50–6861). The edge along the sole is also treated in widely varying fashion. In a fair number of instances it remains undecorated. More frequently, however, there is a narrow marginal border of beads, to which may or may not be added a beaded stripe along the heel seam. The border is probably never lacking where the vamp is completely covered with embroidery, but it is not restricted to such specimens. In several moccasins the stripe does not extend all along the edge. In some cases it ceases with the vamp, in others it passes all round the outer edge, but stops short with the rear end of the vamp on the inside.

To turn to the designs themselves, Fig. 18a illustrates a characteristic form of the U-figure, balancing two "feathers" on its convexity and one on each of the horizontal arms projecting from its base. It is not in any of the Crow specimens available combined with a border stripe. From what has been said above it appears that the U is nearly if not quite so characteristic of the Crow as of the Blackfoot. Its distribution in the area is very interesting: Professor Kroeber found it completely lacking among the Arapaho, Gros Ventre, and Ute, and records only a few Dakota and Shoshoni examples, as well as a single one from the Ojibway. However, Bodmer figures a Mandan Bull dancer wearing moccasins with a simple U-design, and one of the three moccasins shown in the last plate of his Atlas may well be from the same tribe, considering the length of his stay, the others being assigned to the Dakota in the text.[1] Although the Hidatsa moccasins in the Museum yield no support to the suggestion, the possibility should nevertheless be held in mind that the U-pattern may have spread from the Village tribes. If the Blackfoot adopted it only through indirect contact with these peoples, its complete absence among the Gros Ventre is more readily intelligible.

Fig. 19a illustrates the longitudinal stripe combined with short parallel stripes and a border. This, however, by no means always accompanies the stripe; for example, one of Maximilian's pictures shows merely the central stripe.[1] Another design recorded by his artist and still persisting to the present is the circle or "club-head." A typical sample from the Museum's collections is presented in Fig. 18c. This design also occurs both with and without marginal decoration. Further, the circle may be one-stemmed or, as also in Maximilian's picture, two-stemmed. Professor Kroeber finds the circle lacking among the Arapaho but occurring commonly among the Shoshoni and Gros Ventre, and more rarely among the Dakota and Blackfoot. Bodmer's pictures of several Mandan men and of the Hidatsa Dog dancer prove the frequency of this motive in the Village group.

The Maltese cross (Fig. 17d) occurs fairly often, with about equal frequency on adults' and on children's moccasins. Some specimens have a marginal stripe, others have none. One of my interpreters regarded this design as belonging properly to the Cheyenne rather than to the Crow. This would confirm Kroeber's statement that it is most typically Dakota and Cheyenne.

Kroeber's red-line and checker designs occur in a form very similar to that characteristic of the Dakota.[1] Another pattern recalls a Dakota

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[1] Maximilian, *Atlas*, Tab. XVIII; XLVIII, figs. 18; I, 359.
[2] Maximilian, *Atlas*, Vig. XIII.
[3] Wissler, *Decorative Art of the Sioux Indians*, 244, Fig. 80; Pl. LIV, Fig. 2.

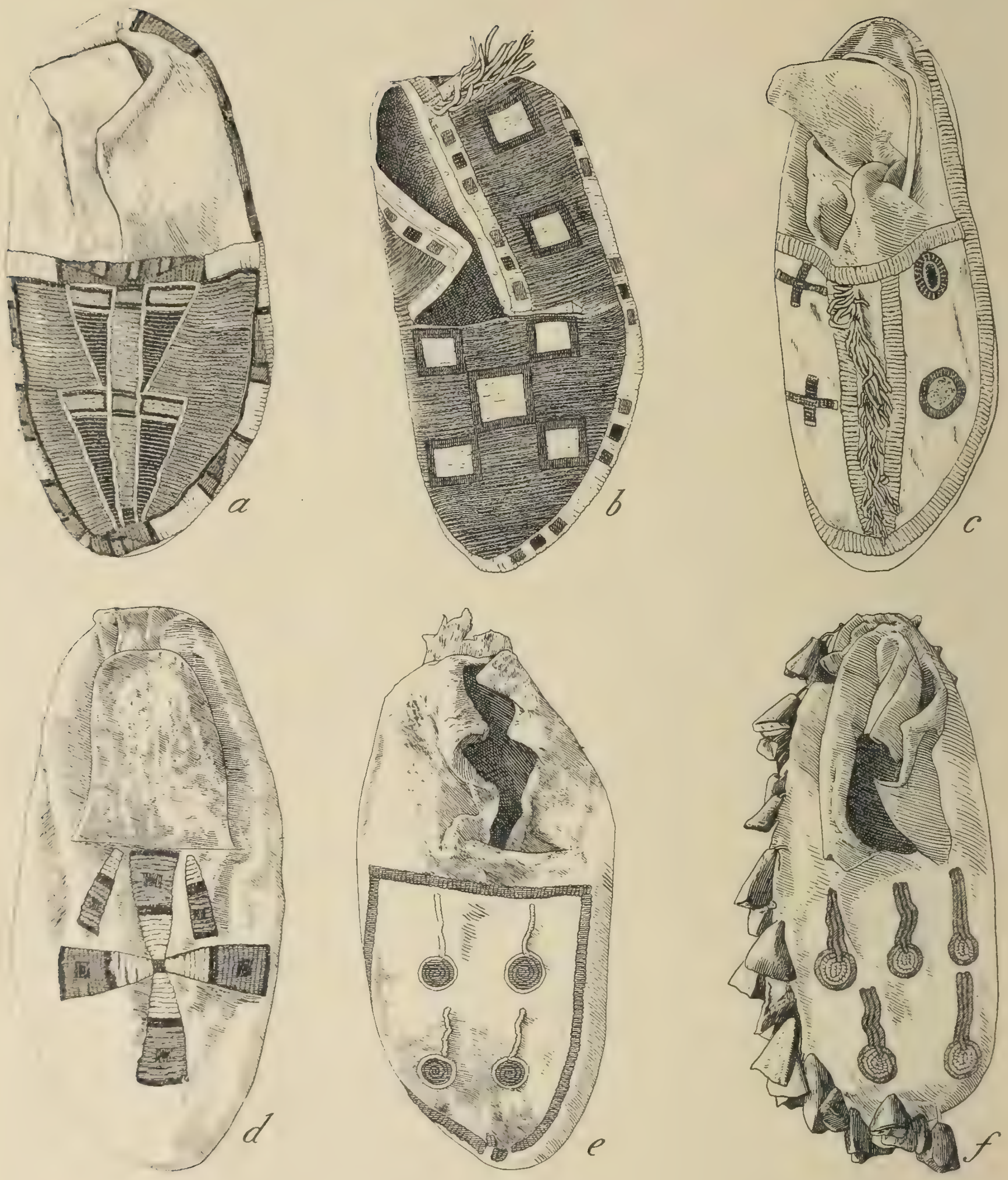

Fig. 17. *a-f* (50-6867a, 50.1-664b, 50-6865a, 50.1-671b, 50.1-3996b, 3958).
Moccasins. Crow.

one on exhibition in the Museum. It consists of a small beaded diamond in the center of the vamp with a centripetal isosceles triangle balanced on each point. In the Dakota specimen a pair of feather designs is substituted for these subsidiary motives. The bird motive found on some Dakota and Assiniboin pieces seems to be absent, though Bodmer figures an Hidatsa wearing moccasins with this type of ornamentation.[1]

A very unusual pattern occurs on two pairs of moccasins said to have been used in the Tobacco dance. In one case (Fig. 17e) there are four small stemmed circles within a narrow frame of beadwork following the edge of the vamp, the two curved lines being connected by a transverse bar in front of the tongue. The second pair of moccasins under discussion lacks the frame but has five precisely similar, though differently colored, stemmed circles, which remain unframed; the toe, the outer edge and the heel seam are trimmed with dewclaws (Fig. 17f).

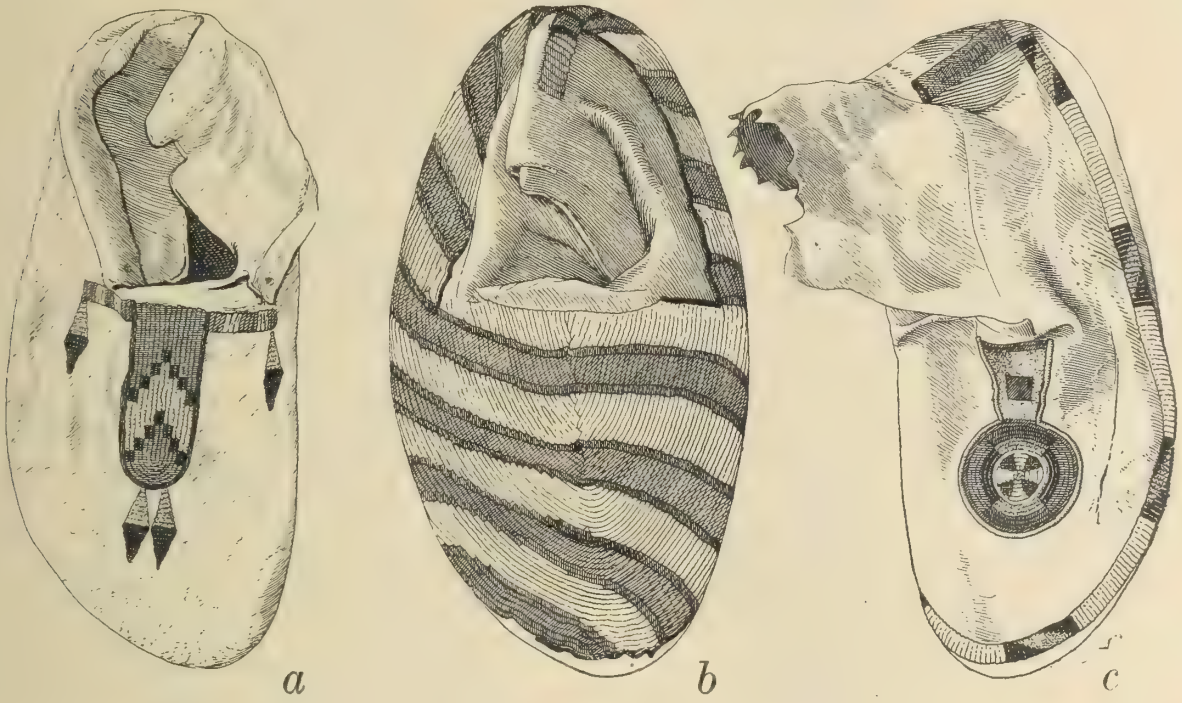

Fig. 18. *a-c* (50-6864a, 50.1-661a, 50-6868b). Moccasins. Crow.

There is one good illustration of the style of ornamentation which Dr. Wissler derives from the structure of the Apache moccasin: two narrow converging bands of beads enclosing a V-shaped space (Fig. 17c).[2] In this specimen a fringe of buckskin rises from the center of this space, part of which at least was originally painted over. Since a border stripe appears together with a transverse band in front of the tongue, the decorative field is naturally subdivided into three parts, the central V-shaped area bounded by the converging stripes and two symmetrical panels suggesting right-angled triangles with a curved hypothenuse. These panels are ornamented with different motives,—the outer with two small circles of beads of which the inner part is painted, the inner with two crosses of corresponding size. The two figures in each panel are differently colored.

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[1] Maximilian, *Atlas*, Tab. 24.
[2] This series, vol. 17, 110 seq.

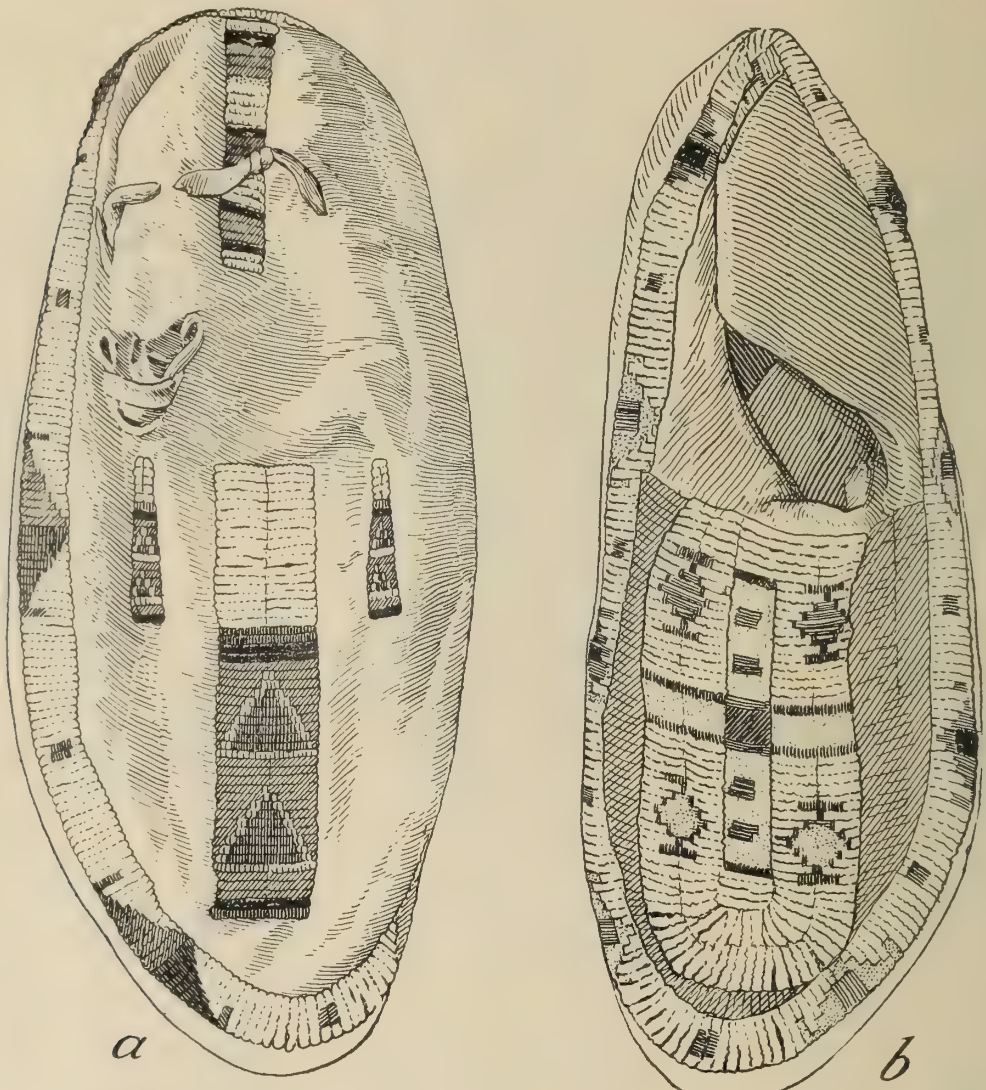

Fig. 19. *a, b* (50-6869b, 6866a). Moccasins. Crow.

It seems to me that this type of decoration is directly related to that occurring on certain moccasins with vamp completely covered with beadwork. Fig. 20a illustrates a typical example. A central area, instead of being merely framed by converging lines, is covered with embroidery, leaving two panels quite similar in shape to those of the example discussed above. But instead of leaving these areas plain except for the small figures described, the artist has embroidered them all over. It is of course possible to break the monotony of the curved triangular spaces by introducing such devices as differently colored zones and subsidiary designs (Specimen 50.1–662). In one case (Fig. 17a) each panel is cut into by two genuine right-angled triangles flanking the narrow central area.

Another category of moccasins with completely decorated vamps is exemplified in Fig. 20b. The essential feature is the arrangement of beads in a series of vertical stripes bounded by the marginal stripe. The stepped design produced by varying the blue of the vertical bands with white squares constitutes an individual variant. In a quill-embroidered pair there is no attempt to relieve the monotony; in another case blue and green lines are introduced so as to result in a number of fret effects. Again alternate bands may vary in coloring. It should be noted that both in this and other classes of moccasins the one or more stripes may run parallel to the marginal stripe, thus more or less considerably diminishing the vamp area available for other ornamentation.

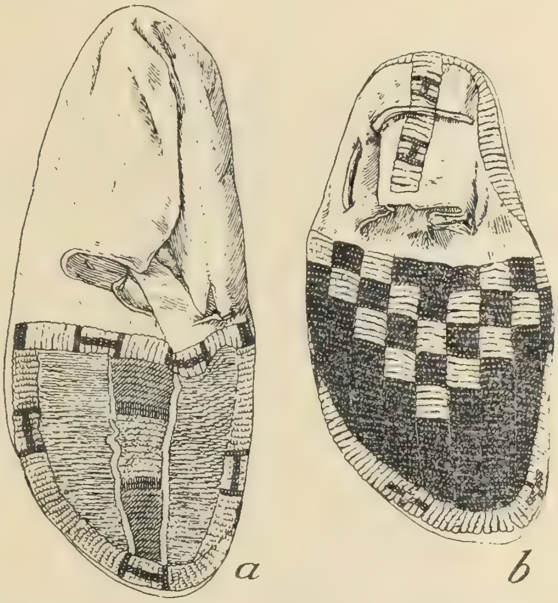

Fig. 20. *a, b* (50.1-1251b, 681a). Moccasins. Crow.

In at least two cases (Fig. 19a, b) there is a border stripe, while the central part of the decorative field is framed by two concentric beaded U-figures enclosing a rectangular cross. This sets off a convexly triangular space on each side, which is filled with beadwork colored so as to stand out from the remainder of the decoration.

It is possible to conceive the method of covering the vamp with parallel transverse lines of quillwork as a derivative of the red-line style, especially as in both a beaded border stripe is used. The psychological effect, of course, is very different. In one Crow pair the quilled portion remains plain, in another (Specimen 50.1–677) stepped motives are introduced.

Finally may be described two modes of decoration found each on a single pair. In one case the border stripe encloses an area covered with horizontal rows of blue beads relieved on the vamp by five box designs (Fig. 17b). The design is continued along the ankle flaps, each side displaying two boxes on the blue background. The frame of the boxes is red, the interior white in all cases. On the flaps there is an upper marginal stripe similar to that along the edge of the moccasin. A quite anomalous style is illustrated in Fig. 18b. There is no border stripe on the vamp and what appears as such at the bottom of the ankle flaps is merely a continuation of the frontal decoration. The strangely amorphous character of this may be best understood genetically: the artist, generally speaking, followed the edge of the moccasin with concentric lines of beads, producing the strange transverse effects by introducing red and green beads on the light-blue background.

Ornamental Riding Gear.

Beadwork appears on various objects connected with the riding-gear employed on special occasions. Thus there are decorative collars, stirrup pendants, croupers, etc. These were associated especially, perhaps even exclusively with the women, for whom there certainly was a definite conventional equipment on state occasions. This is illustrated in my picture of Grasshopper's daughter (Fig. 12), who is seen with a shield and spear.[1] Her horse bears a decorative collar and a characteristic bridle pendant extending from the forehead down the face; the stirrup decoration is also apparent.

The collar shown in this photograph is typical. The lateral decorations are practically duplicated by two specimens in the Museum's collections; only the spaces between the large triangles differ somewhat. More variation is exhibited by the center piece connecting the lateral strips. In Specimen 50.1–709 its rectangular area is framed on all four sides by a narrow beaded border, which encloses two large symmetrical hourglass figures very much constricted in the middle. Within each hourglass sections are marked off by the use of different colors, and between the two hourglasses there is a rectangular cross. In Specimen 50.1–6257 there is again a narrow beaded border, mainly white, enclosing a second still narrower one in blue. Within the space thus doubly framed four vertical lines of white beads mark off panels of varying width, the arrangement being symmetrical. The central panel has a small rectangular cross in the middle; for the rest it exhibits several layers of beadwork differing in color without any special design. The panel on each side of the central one consists of three parts, of which a narrow marginal strip on the outer side is without design. The remainder consists of two triplets of vertically superimposed right-angled triangles, the one series with apices down, the complementary series with apices up. Each marginal panel consists merely of a solid area of yellow beads.

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[1] Cf. Curtis, vol. 4, pls. facing pp. 8, 20.

The stirrup ornamentation that may be considered typical of the Crow is shown in one of Dr. Wissler's illustrations.[1] A comparison of the latter with the Shoshoni picture in the same publication[2] suggests a genetic connection.

The photograph (Fig. 12) shows a characteristic ornament attached to the bridle and falling down over the horse's face. The beaded design in the center of the disc is a Maltese cross. In three specimens in the Museum this central figure varies. One has a central circle with numerous radi. The second exhibits a circle made of a single series of beads enclosing a cross of two single lines of beads; the circle is enclosed in a larger concentric one, and a portion of the intervening ring is set off by difference in color of beadwork. The third specimen has a disc with a four-pointed star.

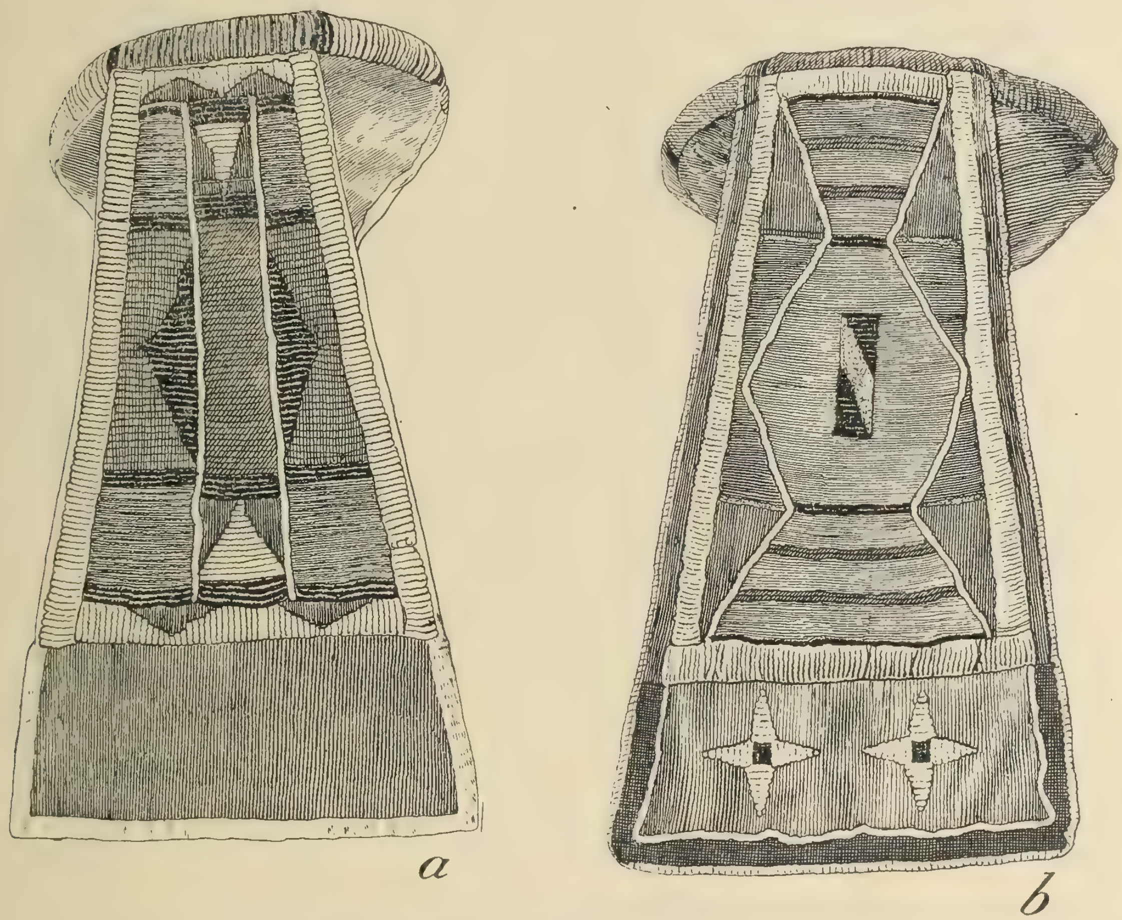

Fig. 21. (50.1-1124). Beaded Saddle Flaps. Crow.

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[1] Wissler, Clark, "Riding Gear of the North American Indians" (*Anthropological Papers, American Museum of Natural History*, vol. 17, part 1, 1915), 26.

[2] Wissler, *Riding Gear*, 6.

A crouper in the collection closely resembles those from the Shoshoni and Blackfoot published in this series.[1]

There are no saddle cloths or bags available for comparison with the Dakota pieces.[2] The saddles themselves, as Wissler has pointed out, conform closely to the Shoshoni pattern and also share the beaded flaps hanging from the pommel and cantle. The available area is in general solidly beaded, but without the development of complicated patterns. The æsthetic effect depends mainly on the disposition of differently colored patches, from which, to be sure, small designs are made to stand out. Thus in Fig. 21 only a number of small triangles appear on the pommel side; and the quite different decoration of the cantle flap may be conceived largely as a combination of triangles.

REALISTIC ART.

Except for sporadic cases, such as occasional attempts in beadwork and the carved stick used in the Hot Dance,[3] realistic art is confined to painted objects. It appears in two forms,—the representations of religious significance and the pictographic war records. According to one informant, martial exploits were not represented on the lodge cover but indoors on the draft-screen. I recall seeing the walls of a frame house lined with canvas bearing such decoration. Of course robes were similarly painted.

The robe bought from Charges-strong will serve as an illustration of Crow pictography (Fig. 22). Here the topmost portion represents the fact that Charges-strong carried the pipe as leader of a war expedition, and killed two. The enemies with up-turned lock are Shoshoni, the remainder are Dakota. The horsetracks represent horses captured from the enemy. Different parts of this section suggest that the captain's party stole seven horses and killed one enemy; stole six horses, killing one man; and so forth. In the section immediately below the one just described the triangularly grouped marks represent a Crow war party. The scout whose tracks (or horse's tracks) appear, goes to the enemies' camp, designated by an isosceles angle, and returns to a pile of buffalo chips. In the third section of the robe the scout, carrying his wolfskin badge, is shown as pursued by the enemy, whose tracks are represented; he kills three men. Two enemies are attacking the mounted hero, who strikes them with his stick. Three enemies attack him with a pistol, arrow, and rifle. He strikes them with a long-feathered spear. Again, he is shown killing an enemy. In the next section of the robe the hero appears on a bay horse, which is killed. Two Dakota shooting at him are struck by him. He catches up with the enemy and strikes one. An enemy on foot shoots at him, the hero shoots and runs over him, goes on foot, spears a man, and kills him. In the lowest section the owner is shown on a raid to the Shoshoni camp. He is driving off five horses, the enemy are in pursuit, dispatching arrows after him. He is again shown driving two horses from the Shoshoni camp.

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[1] Wissler, *Riding Gear*, 18; *Material Culture of the Blackfoot*, 49.
[2] Wissler, *Riding Gear*, 22, 23.
[3] This series, vol. 11, 184.

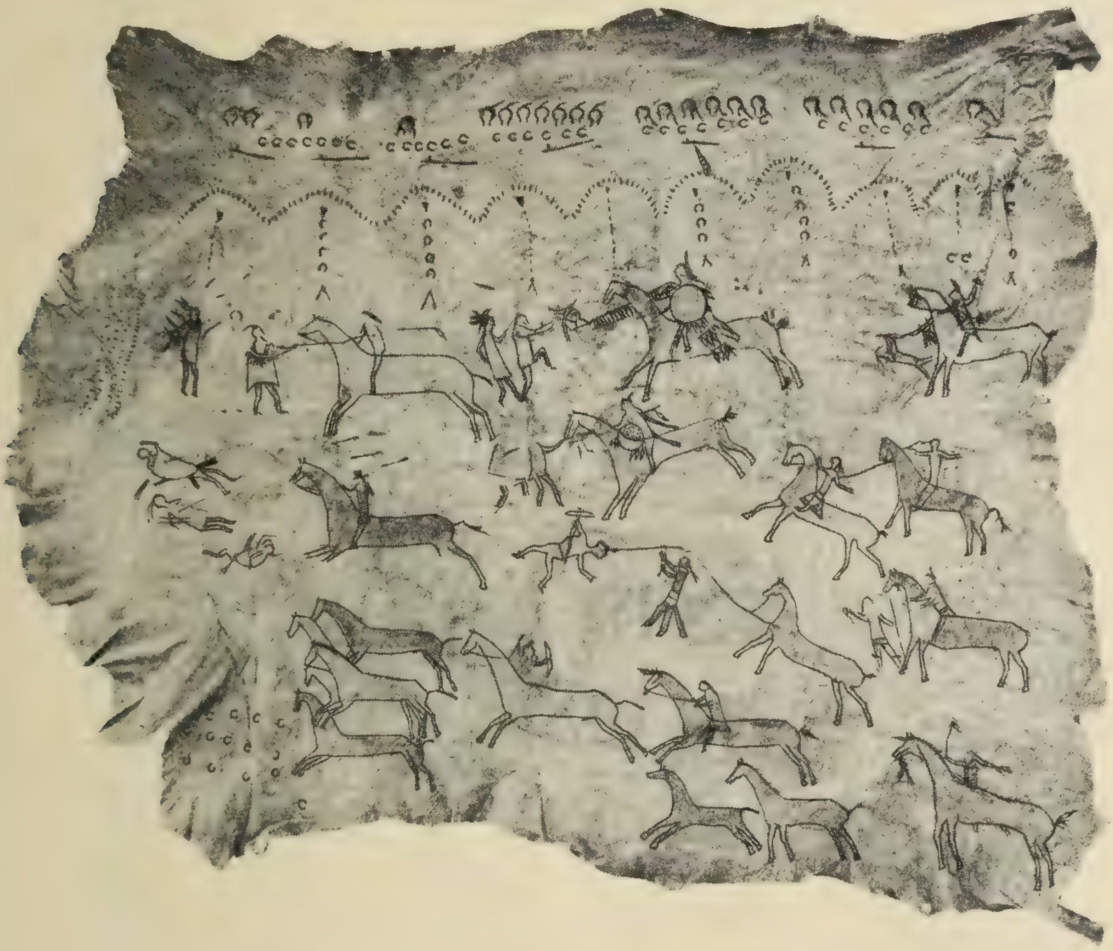

Fig. 22. (50-6826). Robe with Pictographic Design.

It is obvious that though the painting just described is preponderatingly realistic, it is by no means free from symbolical representations.

The practice of decorating tipi covers was certainly obsolescent even when I first visited the Crow. In this respect they presented a striking contrast to the Northern Blackfoot, who during their holiday week in 1907 displayed an impressive number of painted lodges. On a corresponding occasion at Lodge Grass I particularly noted only a single painted tipi, the decoration consisting of the figure of a thunderbird

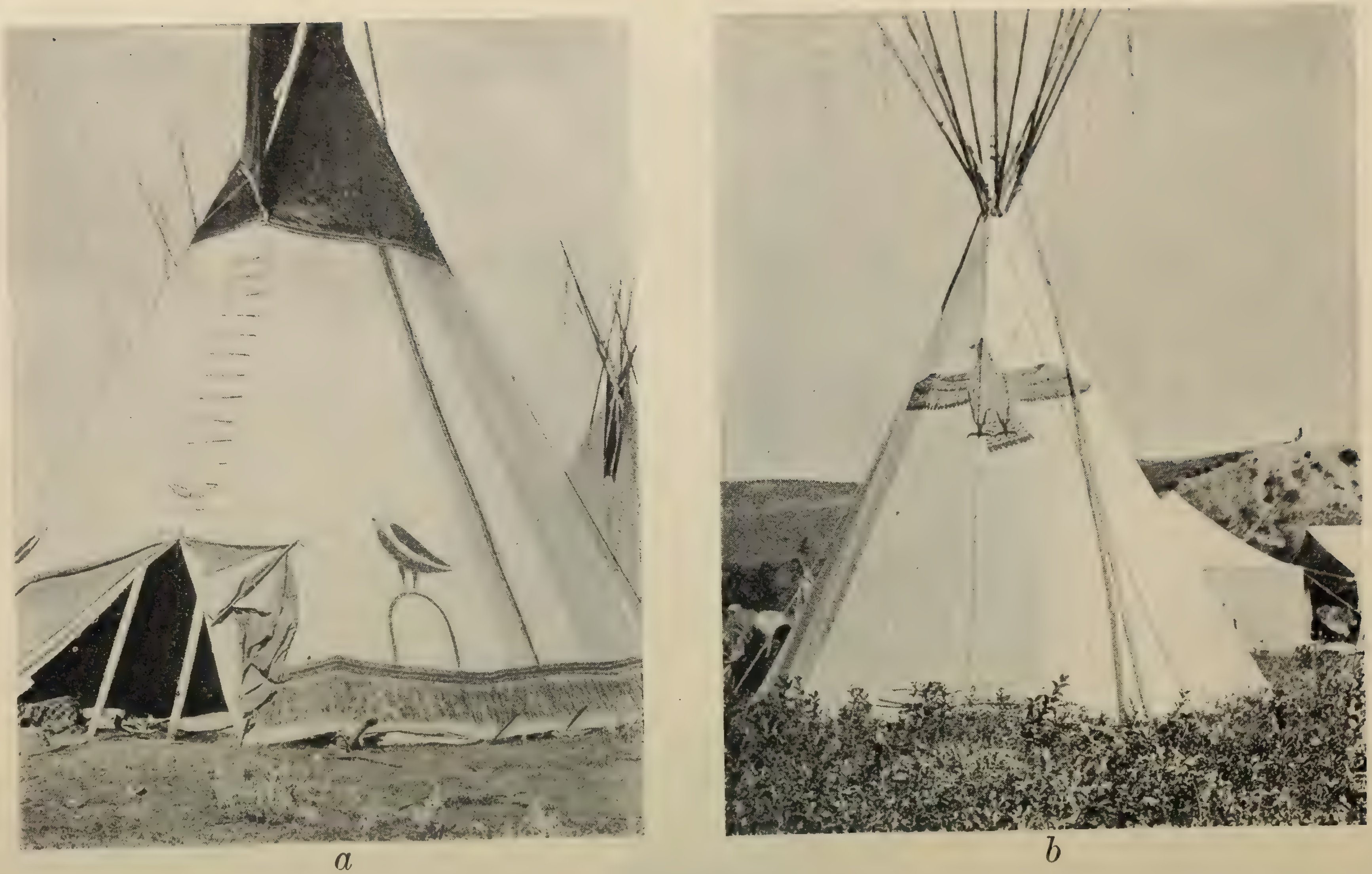

Fig. 23. Tipi Cover Designs. Crow.

(Fig. 23b). My photographs include pictures of several other painted lodge covers, but the most elaborately decorated one, showing figures of horses, was said to be an importation from the Dakota. Another (Fig. 22a) shows ornamentation at the bottom, a crescent above the entrance and a series of bird figures perched on inverted U's resting on the margin at the bottom. On still another lodge there were elongated figures of horses. Mr. Curtis has photographed a medicine lodge with the picture of a feathered pipe on the side and a crescent above it. In another of his illustrations, probably showing another view of the same lodge, there appears again a feathered pipe with a circle above it.[1]

The lodge described and pictured by Catlin also has ornamentation of religious character, though Catlin's interpretation of the human figures as the Great and Evil Spirit is unconvincing.[2] The shields in the Museum have been described in a previous publication.[3] Although animals and other realistic motives appear on shields, they are far from excluding geometrical designs, which may be presumed to have almost always a symbolical significance. In some cases, of course, realism and symbolism are indistinguishable, as when a circle represents the sun or a crescent the moon. Judging from specimens seen in the Field Museum, in the American Museum, and on the Reservation, the buffalo, the eagle (thunderbird), and the elk are the animals most commonly depicted in the religious art of the Crow.

In 1910 I took notes on two blankets seen in Lodge Grass and Pryor, respectively. One of them was said to have been formerly worn in battle. The Thunderbird was painted in the center; the Sun was represented several times, each representation consisting of a series of differently colored concentric rings; and there were a number of stars. The other blanket displayed a female in front of a male elk, the decoration being associated with the Spurned Lover motive.[4] It was said to have been dreamt by a lover whose advances had been repelled, who had sought a vision, seen the robe with its decoration, and with it captivated the haughty maiden.

SYMBOLISM.

Compared with other tribes, the Crow have a decidedly meager system of symbolic interpretation. As for colors, black was the accepted symbol of the slaying of an enemy;[1] red paint was emblematic of longevity and the ownership of property and was specially associated with the Tobacco ceremony; white clay (*ū́ke*) represented a washing to induce a vision and knowledge of the future. Other interpretations depended on individual revelations; thus, lightning lines representing the Thunderbird might be yellow, blue, or green.

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[1] Supplementary Plates to Vol. IV, pl. facing p. 56.

[2] Catlin, George, *Illustrations of the Manners, Customs, and Conditions of the North American Indians* (London, 1848), I, 43 f.

[3] Lowie, Robert H., "Religion of the Crow Indians" (*Anthropological Papers, American Museum of Natural History*, vol. 25, part 2).

[4] Lowie, Robert H., "Myths and Traditions of the Crow Indians" (*Anthropological Papers, American Museum of Natural History*, vol. 25, part 1, 1918), 192.

After not a little questioning as to the interpretation of ornamental designs on parfleches and in beadwork, I arrived at the conclusion that most of them had no symbolical significance and that interpretations in some cases were either quite subjective or at all events applied only to a limited number of instances. The most persistent interpretation for a definitely non-realistic pattern was that of a diamond, painted or embroidered, as a child's navelcord (*bakā́t ictéʻpe*). In a different category belong the interpretations of a zigzag line as lightning, and of a horseshoe, curved or angularized, as a horse. Though they occur frequently, the interpretation (as in the case of the circle representing the sun) rests on a real similarity between the design and the thing it stands for. Of course the point is that simple geometrical forms do not represent objects without ambiguity. Thus, a right-angled triangle was once interpreted as a spear head; a pair of such triangles forming Kroeber's "forked pattern" were interpreted as two facing tipis. On another specimen a large isosceles triangle was said to represent a medicine lodge. The triangular area with convex hypothenuse on a moccasin was called a knife scabbard. For the designs on a crupper the interpretations were manifestly dictated by the use of the object: an elongated isosceles triangle standing on its apex was called the horse's head, two small isosceles triangles balanced on its base were his ears, a similar triangle hanging from its apex was the bridle. Crosses were sometimes called stars. A vest design not clearly drawn in my notebook represented mountains.

Several figures are designated by definite names without apparently having any symbolic significance. Thus the longitudinal stripe on the vamp of a moccasin is known as "many-quills" (*apā́ri-ahṓ*); a circle on a robe as *bic aratsitsə́xe* (robe circle) and on a moccasin as *ītʻuʻpén tsitsə́xe* (tip of circle); the stepped design as *irúə* (color); a diamond, besides the common symbolical appellation of "navel cord" also bears the name of *bāru-xā́we* (beads forked); a half-hourglass was called *mā́cuce*.

The interpretations of certain designs on a vest have already been given (p. 307).

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[1] Lowie, Robert H., "Social Life of the Crow Indians" (*Anthropological Papers, American Museum of Natural History*, vol. 9, part 2, 1912), 235.

SUMMARY.

It seems fairly clear that the Crow have not achieved a high degree of individuality in their art. In the realistic ornamentation of their tents they are distinctly inferior to the Blackfoot, and if they excel the latter in the quality and variety of embroidered designs the reasons may plausibly be found in the influence exerted on the Crow by Dakota contact.

Generally speaking, it may be said that the beadwork of the Crow, especially in its most highly developed representatives, is a somewhat attenuated reflex of Dakota art. Perhaps only in the decoration of moccasins—particularly as regards the popularity of U-patterns—can Blackfoot influence be plausibly assumed.

A question of great theoretical interest which any protracted study of Plains Indian art is likely to raise relates to the connection between beaded and quilled designs. Can we legitimately conclude that the later technique simply continued the patterns made in quills prior to White contact? The difficulty lies in the relative paucity of quillwork as compared with beadwork in our museum collections. Nevertheless, after somewhat rapidly surveying our Plains Indian quillwork, and eking out this meager evidence with the illustrations in Maximilian's Atlas, I have been unable to avoid the tentative conclusion that the relation between beaded and quilled designs is far less close than might a priori be assumed. Or, to put it more precisely, that relationship is limited to a comparatively small number of fairly simple motives. The rosette, the rectangular cross, the isosceles triangle, the solidly worked stripe, the parallel lines, the stepped design,—these doubtless find their prototypes in quillwork. The stepped design, in particular, judging from its ubiquitousness, may be regarded as one of the oldest products of Plains Indian art in embroidery.

The difference between quilled and beadwork lies in the much greater intricacy and variety of the latter. I have not encountered anything in quillwork to compare with, say, the complicated patterns on Dakota and Crow pipe bags. One qualification may be offered. Some of the quilled pieces do exhibit fairly complex forms and their totality possibly comprises a very fair assortment of diverse motives. However, I am decidedly under the impression that these samples of greater skill are exceptional individual achievements rather than representatives of a tribal style. At least, each of these more complicated quilled designs I have specially noted seems to be quite different from the rest. It is not so with beadwork: such combinations of, say, diamonds and forked designs, as may be seen on Dakota and Crow specimens, are not unique but represent an established norm recurring again and again. One fact rather impressed me while turning over a large series of pipe bags. Three quilled bags from as many tribes all displayed very similar decoration,—the stepped design either in its diamond or triangular form. I doubt very much whether three beaded bags similarly taken at random could be found with so little diversity of ornamentation.

So far as I can see, then, the introduction of glass beads stimulated a very considerable efflorescence of new æsthetic conceptions or recombinations, while doubtless most of the older ones were retained.

The rawhide decoration of the Crow has been shown to have quite different relations from those of their beadwork. The Dakota influence in this line of activity is nil. The Crow style has affiliations with that of the Shoshoni, and we might almost add, with the Shoshoni alone.

A trait shared with other Northwestern tribes, notably the Gros Ventre and Blackfoot, is the inconsiderable development of symbolism. In this respect the contrast between the Crow and the Dakota is certainly very marked.

The history of Crow art cannot be satisfactorily traced without much fuller data from the Hidatsa and on the general evolution of Plains æsthetics. So much is at least certain that the rawhide painting of the Crow and the Hidatsa is quite unrelated. The embroidered designs, so far as I can see, also betray no fundamental likeness: such resemblances as exist are readily intelligible as the consequence of the same foreign influences. Whether the forms of art activity more recently in vogue existed at all, or not before the separation, Crow and Hidatsa art have certainly had very different histories, and the renewed contact during the last century has little affected the extent of these differences.

ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

VOL. XXI, PART V

MINOR CEREMONIES OF THE CROW INDIANS

BY

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AMERICAN MUSEUM PRESS
NEW YORK
1924

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PREFACE

The following data were gathered in the course of my visits to the Crow Indians of southeastern Montana (1907–1916); they form the concluding part of my studies of the ceremonial life of this people. For the most part the performances here considered are of clearly foreign origin, and some of them never gained general popularity. This did not, of course, detract from the value of such a rite as that of the Sacred Pipe from the point of view of the initiate.

Those who wish to gain a perspective of Crow ceremonial organization as a whole are referred to previous papers in this series, especially to the Introduction of my description of "The Tobacco Society of the Crow Indians" (this volume, part 2).

Robert H. Lowie.

Berkeley, California,
April, 1924.

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THE HORSE DANCE.

The Horse dance (*itsī́n-disùə*)[1] was a sacred ceremony which the River Crow obtained from the Assiniboin. Among the latter it ranks on a par with the Sun dance but on account of its esoteric character I failed to get an adequate Assiniboin account.[2] I do not think that the ceremony spread to the Mountain Crow and even in the north the number of participants was limited. Lone-tree said there were never more than about thirty men, though the wives of married members were allowed to take part. Even this estimate is very much exaggerated according to Strikes-at-night, who states that there were never more than six people owning the medicine.

The exoteric point of view, as expounded by Gray-bull and Hunts-to-die, is that the members of the society owned a powerful elixir by means of which horses were promptly restored to normal condition when exhausted. The ingredients were held secret; Gray-bull obtained just a little of the medicine from Strikes-at-night, who happened to be his brother's daughter. He put a little on his horse's nostrils, a little at the end of a stick into the horse's mouth, and rubbed some on the hoofs; though the horse had been tired out before, he then acted as though he had not run at all. Anyone who thus doctored a horse received a fee for his services. According to Hunts-to-die, the medicine is a certain root and may be used to restore sick people as well as horses. It is put into the person's mouth, and the juice is swallowed; if the patient bleeds from the nose and puts the root into his mouth, the flux ceases.

As to the origin of the society, Lone-tree and Strikes-at-night differ somewhat. Lone-tree says it was introduced before he was born. An Assiniboin went up a mountain on the other side of the Missouri, about the boundary line of Montana and North Dakota, in order to get a vision. On the third night he dreamt that he was looking toward the Rockies and saw a string of horses extending thence to where he was standing. After his vision he came to get horses and always owned over a hundred head. He continued dreaming every night and hearing different sounds. He adopted another man and thus started the society.

According to Strikes-at-night the Assiniboin were living on the other side of the Missouri and were very poor, being without horses and having only dogs and travois. There was a middle-aged man among them named Weasel-moccasins. While sleeping at night he had a vision. An eagle came to him, and said, "I come to you from the Wolf mountains; I see that your people have no horses and I come to give you horses." Shortly after this experience he came to own a stallion and a mare; they multiplied. When Strikes-at-night saw the visionary, all the other Assiniboin were afoot, but this man owned sixty head of horses. He became one of the medicinemen of his tribe. He was able to show an eagle head from his mouth.[1] One by one his people desired horses and paid him fees to make medicine so that they too might own horses. Strikes-at-night at that time was with the River Crow. One day Crooked-arm's father, who was very poor, got the idea that he would like to own the Assiniboin's medicine. He told the Assiniboin. Two tents were put together to form one large lodge. The shaman entered and spread out his medicines. The Crow's clan piled up presents in a big heap. The singing began. Except for the Crow and his wife, all the people in the lodge were Assiniboin. The shaman took a drum, painted it red, then made a rumbling noise, and sang a sacred song. All those inside danced. The Crow and his wife were opposite to the shaman. The shaman held a whole eagle in his right hand, a whip in his left; with the eagle he made a wobbling movement to imitate an eagle's flight. He told them not to take the eagle from him directly but first to rub his arm down from the shoulder. After this song he laid down the whip and cut off the eagle's head, which was painted red; this he kept in his right hand and took the tail into his left. He danced and whistled in imitation of an eagle and pointed at the novices, who were dancing toward him, to take the head and tail; but when they approached some magic power restrained them from seizing these. The shaman said, "We shall have four songs and if you cannot take them at the end of the fourth song you cannot take them at all." After the third song he said, "This is your last chance; if you can't get it now, I'll keep it." This time the Crow's relatives outside the lodge scolded him. The couple were getting excited. When the fourth song began, they immediately seized the medicine and took it without rubbing the Assiniboin's arm. Then everyone sat down to eat together. After the collation the shaman ordered the musicians to sing four songs, which he gave to the Crow.

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[1] *itsíre*, horse; *disûə*, dance.
[2] This series, vol. 4, 57 seq.

Strikes-at-night showed me her Horse bundle. In former times it was only opened when outsiders gave a feast in honor of the eagle medicine,—usually when returning victorious from a war party. Then medicine songs were sung and the Horse dance would be performed by the members. The bundle seen contained an eagle head and an otterskin with an eagle plume; to the center of the otterskin was sewed one of an eagle's legs. The medicines were in a rectangular rawhide bag decorated with the picture of an elongated horse and that of a whip above it. My informant said that this was identical with the bundle originally received by the Crow. In former years she would carry it on her back whenever the Crow moved. Through its blessings she never suffered poverty. The power is still there, for her son Bull-weasel, over whose bed she keeps the bundle, owns plenty of horses. The following is the story of her acquisition of the medicine:—

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[1] This refers to the *bâtsirəpe* trick of Crow shamans.

Thus[1] the River Crow had it (the Horse dance). The poor Crow would covet the medicine. Bull-weasel's father was very handsome. There was a white man named Big-neck, and Bull-weasel's father would lie with his wife. Big-neck in revenge magically blinded him. I was still young. We had a child and we got to be quite helpless; no one herded our horses and no one brought buffalo meat for us. Then we began to think of this medicine, having seen what it did for others. We had only five head of horses. We discussed what to do, seeing that the Crow owners refused to sell this medicine to others. One owner wanted a tent and needed hides tanned. Since I was a good tanner, I went to his wife and offered to tan all the requisite hides without demanding pay outright. I got two hides the first time; they were large. I fixed them nicely, returned them, and said I would fix up the whole lodge for them. Any other hides her husband brought I would fix in the same way. Then at every hunt this man brought three or four hides for me to prepare. I took the four hides, prepared and returned them, and so it went on. Finally I had fifteen of these hides; I fleshed and scraped them. Later they were ready for the softening process. I got some of my people to help me and we rubbed the hides. They were staked out to dry, then they were ready for the tent. I got an old woman to help erect the lodge. The hides were sewed together. After that, the woman asked what pay I wanted, whether a horse or some other property. I said, "No, I want to take your medicine." I told her my husband was blind, that I had a child, and that we were poor, that was why I wanted the medicine. The woman got angry. She said I should have told her that before. "If you had told me before, I should never have let you finish the hides. Now I can hardly refuse you." For a long while she remained silent, then bade me bring my husband. When we came over, she said she had refused to adopt any of the River Crow. "Now you have worked hard on this tent and finished it. I have thought it over and I'll give it to you." Early that evening she called us over and also our relatives. The owner (her husband) took his drum and started to sing. We merely sat there and listened. They had prepared eatables. They burnt incense of sweetgrass and took out medicines, which they held over the incense. All the eatables were smoked with incense and then put aside. All the people inside had cups and took lunch. Then, after lunch, I and my husband went out. Several days later they called us over again. They went through the same process exactly. The owner called his relatives. The other people were telling me I was very cunning because of the way I got the medicine. I had merely followed my husband's directions, but they all laid it to me. We went out again without medicine. Several days later they called us in again and the same performance was repeated.

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[1] This is in continuation of her tale of how the Crow got the medicine.

One day they ordered the camp not to move. This man said he was going to have an adoption. A big tent was put up with two tents together. The people were talking about our adoption. The owner sent a relative, inviting us to come. I went with my two sons. We went inside. All the medicine was laid out on a nice spread in a semicircle; some ermine skins were there also. The owner sat on the side opposite to ours. A buckskin dress painted red from the waist up was given to me. They painted my face red all over. Near the corners of the mouth they painted an oval of dark green color. They painted me up and bade me sit down. They called my husband, but on account of his blindness his older son served as substitute. His name was Winner. The wife of the owner painted Winner's face and put a bird on his head. "If you shall desire any woman when you get older you will not have any difficulty in getting her." She called over Bull-weasel, who was old enough to talk, and he was also painted. A very small package, the size of a man's thumb, was tied to his back. "When this boy grows up to be a young man, he won't have to wish for any young women in vain." She painted my husband's face and he sat down with us. They began to sing, and the man sang his medicine songs. People liked the Horse dance even better than the Tobacco ceremony.

After we got our medicine, when men went on the warpath and saw the enemy's camp, they would pray to the Eagle, "If I get back with horses, I'll feed you plentifully and make a robe for you." When they got back, they would call us, feed us, and give us presents.

The adoption tent was very large. The owner couple rose and danced. They had me fixed up with finery and took me to the front in full view of everyone. They placed me near the door. All the River Crow were looking at me and I got nervous,—afraid that I could not get through properly, but I made up my mind to get the medicine. Everything, the couple's clothes, face, hair, were all painted red. There was the rolling sound of drums. I still own the songs and taught them to my son, who sings them at the Cooked Meat ceremony. The woman had an eagle head and tail and made a wobbling motion, while her husband had a whip. The woman put me out of my mind. For a while she thought I was going to take the medicine, but I failed. I heard everyone scolding me from the outside. I was shaking, afraid I should fail the second time. The second time the woman made an eagle come out of her own mouth, which excited me still more. It was like someone seizing me by the neck and choking me. I failed the second time. They started the third song. Everyone scolded me. "You've been working to get the medicine, now you have a chance, why don't you get it?" The third time incense was burned over the woman to make the eagle recede again, which gave me time to brace up. The fourth time the man sat down by the door, and his wife was standing alone. At the fourth song she whistled and made the eagle wobble. I could hardly move. I stopped dancing when she got close, seized her by the armpits and gently rubbed down her arm. Everyone was glad and I heard expressions such as, "The poor woman got it after all." The woman told me to return the medicine to the spread. Then they smoked and sang four songs they wanted to give us, whereupon all got up to dance. They gave me a rope for the left hand and a whip for my right and bade me make a circle with my right. Then I and my sons, one on each side, danced to the four songs. After the fourth song they bade me be seated. Then I got the medicine bundle shown to you, which I carried on my back. I received instructions how to burn incense and how to hold the eagle. They asked me to stand and they placed the medicine on my back. They ordered me to place it in just that way at every moving of the camp. "Whenever you put up a tipi, place the bundle below the point of intersection of poles, tying it to a special staff." I have plenty of Tobacco medicine, but prize none so highly as the Horse medicine. Even today no menstruating woman is allowed to enter my house. If I did not observe the rules, I might have an accident.

I remarried after my first husband's death but my second husband was afraid of the bundle. He died also. I have not yet turned it over to my son, but place it over his bed. The former owners made medicine similar to that given to me for themselves. There were three others who got initiated, but they only got part of the medicine. I never adopted anyone. The songs were in both the Assiniboin and Crow languages.

The horse medicine for reviving horses when exhausted was part of the medicine bundle. On the warpath when a horse was worn out the riders would point the root toward the four quarters, then place it in the horse's mouth, and this would make the horse as fresh as ever. Only a small amount was given to me and I have been very careful with it.

Considerable property was acquired by me and my family since we got the medicine bundle,—plenty of horses, and other valuables. Sometimes there was a rumor that all medicines were to be taken away by the Government, then I could never sleep for fear of losing this Horse medicine. I do not consider myself holy, but attribute my success to this medicine.

The songs were used when food was spread for the eagle. I would get up and burn incense under the food, take the bird, and hold it over the incense. There were songs in connection with taking out the bird.

The dance was up and down. Only those who owned the medicine danced. Nowadays only my two sons and I, Crooked-arm, and a Bighorn District Crow would dance (i.e., have the privilege).

Lone-tree, who is presumably the Bighorn Crow referred to by Strikes-at-night, described his experiences as follows:—

Once I was very poor. I saw this society dance and asked one of the members to adopt me. He consented. I stayed with him and hunted for my 'father' all winter, bringing him ninety buffalo, also some deer. In the spring I was adopted. They did not dance, but only sang for four nights and on the fifth they initiated me. They opened up their medicine bags and bade me and my wife each to choose three medicines. I took a whip (*itsī̆ritse*), a short sash (*mare-ā̆rekbàce*) with plenty of hair from a horse's mane and little hawkbells, and a painted horse's hoof. My wife chose a dewclaw rattle (*mā̆xaxorē̆*), a big shell, and some variously colored stones representing the horses I was to get. Then as a receptacle for these we received a big bag painted in red with a representation of a standing horse. After this I became a rich man.

One night my wife and I were singing Horse society songs. I wished to win something. The next morning I went for my horses and as soon as I got to my herd I saw two new race horses among mine with brand-new saddles and blankets. I knew they had belonged to Sioux Indians.

On another occasion my wife and I were singing at night and the following morning I found a similarly equipped horse. I sang another tune and found a stray horse in my herd. Still another time I got a stray mare. On another occasion I sang and a short time afterward I killed an enemy and struck a coup. Another time I sang with my wife, using the dewclaw rattle. The following day there was a big fight and I captured the prettiest horse ever owned by a Sioux, a red-eared pinto, and in addition a perfectly white horse. The people crowded around to look at my horses.

I also got the root for restoring horses, but I don't know its name, only my 'father' knew it. When people were about to race, they paid me so much to put a little of the root into a horse's mouth and make him win. Sometimes a horse was given in payment for this.

Sometimes a war captain would say, "If I return with good luck, I'll put up a feast for the Horse dancers." Then on returning he would entertain them, and they would dance. In the dance the women all stood in a row, while the men walked. The dancers were called *akitsī́n-dicɛ̀*, Those-who-the-horse-dance. The ceremony was last performed about twenty-five years ago (speaking in 1911). They bought songs from one another; some cost more than others.

It is worth noting that the emphasis is placed quite differently in the esoteric and exoteric accounts. The latter stress the horse restorative, while the former mention it as a rather subordinate element of the powers conveyed through adoption. The point accentuated by Lone-tree and Strikes-at-night is that poor people note the prosperity of the Horse bundle owners and seek success through the same channel. This motive also appears clearly in my otherwise meager Assiniboin account, which omits mention of the elixir.

Nothing in the Crow data proves that the Horse dancers formed more than a loose association; but the Assiniboin apparently had a real organization with some differentiation of function among the members.

The fact that the Crow derived the Horse dance from the Assiniboin is of course not conclusive as to the ultimate origin of the ceremony. Indeed, the Assiniboin themselves lay no claim to priority but attribute its introduction to the Northern Blackfoot. As a matter of fact, the Blackfoot have Horse bundles obviously connected with those of the Crow.[1] They contain medicines for restoring exhausted horses and war leaders were accustomed to give feasts to the bundle owners as among the Crow. The use of an oblong altar on which sweetgrass is burned for incense is common to the Assiniboin and Blackfoot, as is the prominence of berries at the feast. The Oglala also present an analogous phenomenon in their Horse cult.[2] The members seem to have generic powers over horses, such as capturing and curing them. More particularly, we learn of medicines serving to invigorate exhausted horses. On the other hand, I fail to detect resemblances proving historical connection in the 'Horse' dances or ceremonies of other tribes. For example, there is nothing so far as I can see that connects the Horse dance of the Eastern Dakota with that of the Crow, Oglala, Blackfoot, and Assiniboin. In short, the complex under discussion centers in the northwestern Plains.

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[1] This series, vol. 7, 107, seq.

[2] This series, vol. 11, 95 seq.

THE MEDICINE PIPE

The Village Indian Ritual

There is complete agreement among the Crow that the Medicine Pipe (*ī́ptse waxpɛ́*) ceremony is derived from the Hidatsa. Curtis sets 1825 as the year of its introduction, Red-feather-at-the-temple and Rotten-belly having then obtained the ritual from the Hidatsa while attending a council on Knife River.[1] The Crow represent this as the distinctive ritualistic possession of the sister tribe, a theory not in harmony with either the facts or even the Hidatsa point of view. It is certain that the ceremony is regarded by the Crow as different from their ancient ceremonials,—not ranking lower, but decidedly as something alien. This being so, it seems desirable to premise an Hidatsa account secured from Wolf-chief in 1913. The Hidatsa name of the performance is *marā́kɛ* or *mā̆karícta xupā́ri;* the latter designation means literally "Children's Medicine." or "sacred child."

Wolf-chief's Account. When I was twenty-one years old, an Arikara called me to his house and said, "I wish to make you my child." I told him I was willing but was not yet ready because I did not own many horses. Thereafter every once in a while he would call me in and dine me. In the winter I cut ash wood and sold it at the Agency. They paid me five dollars a cord, so that I had fifty dollars in all. For this I bought a good horse from a white man. I called the Arikara, dined him, and told him I had bought a good horse (i.e. not a pony) from a white man. He said, "Very well, I am the teacher of the Pipe ceremony. It comes from the Sun. I am sure he will be glad when I adopt you. I'll give you the true medicine bundle for I belong to it myself as leader. Wait two nights, I wish to get your clothes ready, then we'll begin." "All right, I'll notify my relatives to help me with property to buy your bundle." "I will send you a common pipe by a man and he will make you smoke it. Then we shall sing and come to your lodge and hold the ceremony at the sacred lodge of the Arikara."

Two days later the Arikara came out of the sacred lodge accompanied by others and sang a song. He continued singing through the village till he got to my lodge. Outside one of the Arikara recited a coup, then about six or seven came in with two drums, walked to the rear and faced the door. My adopter said, "Son, when they sing, I'll kneel down before these men. I'll raise my pipe and at the close I'll move a little nearer to you. At the end of each song I'll move closer and after the fourth time I'll be quite close to you." He was carrying a feathered pipestem and also had a red stone bowl ready to slip on the stem. This man was Singer, that is why he put the red bowl on the pipestem.

They began to sing. My 'father' knelt and raised the pipe with the feathers. At the end of the song he moved a little nearer to me and said in Arikara: "Smoke, my son (*cu'táwicá natáha+ū́*)." The fourth time he got in front of me and said, "My son, smoke." I reached for the pipestem, held it, and pretended to smoke. All the others said, "*nū̆wahiní,*" the Arikara equivalent of Hidatsa *hahṓ* (thanks!). This pipestem was perforated but when they were in a hurry the stem was not perforated. My 'father' seized my blanket while another man held it on the other side and said, "Stand up!" Two others similarly came to my wife and held her in the same way. They sang. Four times we walked clockwise round the fireplace,—first the two Arikara with myself between them, behind us my wife with an Arikara on either side of her, and behind them three singers. We then walked through the village in this formation, my 'father' carrying the sacred pipe. Thus we got to the sacred lodge of the Arikara, where a great many spectators were waiting for us. I stood in the center of the rear, with my wife on my left and Long-bear (the adopter) on my right. Immediately to the right of him were the other singers, and at their right the two dancers. The spectators were grouped on both sides of the door, in front of the fireplace. The two pipestems were placed before me and my wife.

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[1] Curtis, Edward S., *North American Indians*, vol. 4, 179.

My 'father' rose, took a coal from the fireplace and burned incense in front of the pipes. He lifted both stems at the same time and smoked them with incense, first holding the feathers down, then inverting them over the smoke. Finally he planted them in the ground again, took two rattles, shook them, smoked them with incense, and put them down. One rattle was made of skin, the other from a baking-powder can. The 'father' addressed the dancers. "Come forward and receive the sacred pipes and rattles; I am done with them now."

The dancers rose and each took one pipestem in his left hand and a rattle in his right hand. They danced very nicely, shaking the rattles at the same time. They went round the fireplace. It was a very fine dance. Each danced where he wanted to. Sometimes they came forward to us and held the feathers over our heads. Sometimes they shook their shoulders and heads. They imitated birds flying. They would think to themselves, "I am a young bird" or "I am an egg." Two Arikara women were sitting behind us. One of them was swaying my body, the other my wife's. My relatives and friends brought in gifts and piled them up before me. The dancers ceased and put the pipestems back into their places. The spectators went away.

Long-bear said, "Now let us have a smoke." We smoked a common pipe. "Now we'll get ready to paint our child's face." He rose and addressed his friends as follows: "I will burn incense, and you, dancers, come when I call you. Friends, when I call you, come and stand in a curve in front of our child." He burned sweetgrass for incense and smoked the pipes and rattles, then he summoned the dancers, each of whom took a pipe and a rattle. The dancers were standing, facing me and my wife. Long-bear said, "Friends, come." Then they all stood in a curve facing me. "While you are singing, I will paint my son's face and my wife will paint his wife. Dancers, while they sing, don't go too fast, just move slowly, cross each other's path, and go as far only as the two rear posts." They brought a dish with red paint and charcoal. He wetted it, and got ready for me, then called his wife, who sat down beside him. He placed a buffalo skull to face us and sat behind it. To the singers he said, "Singers, sing the song called 'Sun, come down and enter the lodge'." He asked me to take off my clothes; I removed my leggings and shirt. They sang three songs; I did not catch the meaning of the words. During the song he dipped his fingers into the red paint and began motioning on my breast as if tracing an oval, then he painted a red oval. "Turn round, my son." I put my back towards him, then he painted a semicircle in black on it." My wife was not painted. "Now I want to paint your face." Then he said to his friends, "This red oval on my son's breast represents the Sun, and the semicircle in the back represents the Moon. Now I want to paint his face, comb his hair and tie a plume to his head. Sing all the songs now and sing them correctly." On the buffalo skull I saw two plumes and at the bottom of the plumes the skin from a duck's head, i.e., the green part of it, tied with a string and hanging down, which was to be used later. On the skull lay a stick about seven inches long, sharpened at one end and painted red. Nearby was a little basketry tray, a piece of buffalo fat, and a porcupine-tail comb.

Next they sang the 'Pour-water-on-the-head' song. Long-bear took the tray and held it over my head, at the same time holding the reddened stick in his hand. He made the motion of punching a hole in the tray so as to make the water flow through it. The fourth time he really pierced it, but there was no water in it, it was merely symbolical. When they began the Combing song he took up the comb, made motions over my head and walked round me. The fourth time he combed my hair. Then they sang the Buffalo-fat song. He made the motions of rubbing and finally oiled my face with the fat. The Red-paint song came next. Long-bear made the motions of painting and the fourth time he put red paint on my face below the lips.[1] Now his wife took a plume and tied it to my wife's hair. Long-bear painted my face with two slanting lines[2] on either side, extending from the level of the nostrils to the forehead, and with one line in the center from the bottom of the nose up to the middle of the forehead. On the left side of the head he tied a plume so that it hung down. At the same time his wife painted my wife's face in the same fashion as mine.

"Now sing the Buffalo Skull song." The meaning of this song is: "The buffalo are coming." They also repeated the Red-paint song. After four motions the skull was painted red below the eyes and with two lines on each side like those on my face. Then the singers and members all went back and the dancers returned the pipes to their places.

Long-bear then spoke to me as follows: "Now, my son, if you want to become a singer, I can sell the privilege to you, but it costs plenty of property. If you care to buy, it will be well." The members said, "You did well to adopt him. He belongs to another tribe, but now we are all together[3] and we are sure our children will all intermarry." I had not yet decided what to say. I was afraid for if I disobeyed any of the rules I was liable to get into trouble, especially because I was of another tribe. I answered, "No, father, I am afraid. I do not know the rules and anyone who makes a mistake will get into trouble. I do not want to buy." He said that that was all right.[4] "This corn (which had been tied to the sticks from the beginning of the ceremony) is food, but it is your medicine now. If you pray to it, you will raise corn. This buffalo is also food, but now it is your medicine too, and I am sure if you pray to it you will get buffalo easily. This bundle is used." With this he took a sack of red cloth and put into it one of the pipestems used in the ceremony; he also covered up the sacred pipe with a wildcat skin and tied it in two places. "Hang it up on the wall over your head and if they feel kindly toward you, they may give you a song or a vision." He gave me a rattle and tied it to the sacred pipe.

"Now I want to send my son to his home. Sing the Home-sending song." They sang it. "Stand up, my son. Hold the horns of the buffalo skull." They brought the pipe and laid it over the skull and over my hands. He continued: "This corn shall be kept by your wife." So she took the corn on the stick. There were four songs. "Walk, my son." I began to walk. I was not wearing a shirt for they wanted to show my decorated body to the people. My wife was following me. When I was going outdoors, Long-bear said, "My son, after a while I will give you some clothes, you are on a good path, go forward." So I went homeward. After we had returned Long-bear brought me beaded leggings, a shirt, and a blanket, all with beadwork. His wife gave mine a blanket, and they gave us three additional blankets. Then Long-bear burned incense in a pan and walked round us. "I am all done, my son." Then the goods piled up by my relatives and the five horses which had been brought became Long-bear's property.

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[1] A sketch drawn by Wolf-chief's nephew, Goodbird, suggests that the painting extended up to the nose; see also Owl-woman's narrative, below.

[2] In the sketch they are nearly vertical.

[3] For some time the Mandan, Hidatsa, and Arikara have been occupying the same reservation.

[4] That is, he did not resent Wolf-chief's attitude.

When I was thirty years old, I visited the Crow Indians and adopted Wet (Haxítsic) as my son. Two Hidatsa, Hawk, as Singer, and Chicken-tells-lies, accompanied me and gave me what help they could. I painted only the face of my 'son,' then I gave him a newly-made pipe in imitation of the old one, also a wildcat skin, corn, and plume. I told Wet to keep these articles sacred and tie them over his door when they camped. I heard that he did so. I got goods and sixty horses, for Wet was a big chief. We got home.

On the third night after his adoption Wet tied the bundle over the door of his tent. He had picketed one good horse. One member of his family went out and returned late. As soon as he had got inside the horse began to neigh. He raised the cloth door and looking out he saw an enemy trying to steal the horse. He roused Wet, saying, "Get your gun." The enemy was about to mount when Wet shot him. He, his brother, and two others all counted coup on him. The Crow thought then that the bundle Wet had received was a good one; the enemy was killed close to it.

Wolf-chief's account may be supplemented by that of Owl-woman, an old Mandan. She gives the Mandan name of the ceremony as *sukxōpini.*

Owl-woman's Account. This society came originally from the Arikara. Once Short-tail-bull came to my family and asked that I and my husband be adopted. We consented. There were two children in our family and all four of us were adopted jointly. The man returned and provided us all with new clothing. He gave my husband a shirt, skin leggings, and a robe. He gave me a painted robe, a mountain-sheep dress, and red leggings. Our boy got a tanned calfskin robe and a coat of red cloth, the girl a cloth, a dress, and a shawl.

The members of the society gathered in an earth-lodge and came to my house, singing. They sang outside and asked a man who had entered an enemy's lodge to open the door. That is the only kind of man who is permitted to do this. He would say, "Once I opened an enemy's door and entered." One man led my husband by the arm and one led me and my two children. They took us to the lodge of the society and made us sit down in the center. The drummers then sang and the two dancers danced. These wore fine leggings and moccasins, and had feathers to indicate their war deeds. They dance holding the pipe in the left hand and a gourd rattle in the right. They crossed their arms, danced close to us, and put the feathers of the pipe above us, then they danced back and repeated their movements. Several songs were sung. When they had done dancing, they put near the fire a cross of four bunches of grass and took one of us at a time into the center of the square. They took a small willow basket with water and put it over the tyro's head. The warrior who recited his coups in opening the door was called to tell his deeds and punched a hole with an awl, so that the water flowed on the novice's head. Then they took a wildcat skin and rubbed his body with it in order to remove all sickness from his body.

It was at this point that we received the new clothing (see above). While we were dressing, a curtain was put before us so that no one could see us dress. The 'father' painted our faces, combed our hair and dressed us. Always the same design is used in painting: the face is painted red below the nose; there are two red streaks extending perpendicularly down each cheek; and one red streak is marked from the center of the forehead down the length of the nose.

Our relatives brought calico cloths and piled up the property before us. They furnished us with two horses and we ourselves contributed five horses to pay our 'father.' During the singing someone sat behind each of us, and they swayed our bodies back and forth as we were sitting there.

When we got home, we gave a feast to all the society. Then we washed our faces with the wildcat skin to remove the paint. Then my husband received a pipestem and I an ear of corn, which I always kept in a bundle in the rear of the lodge. Black and white eagle feathers were tied to the pipestem. The wildcat skin and the pipe were tied up outside the lodge to a pole for four nights. Then we gave away the twelve eagle feathers to our relatives; we were afraid to give them away before the fourth night. After that we took our medicines inside.

We now had the right to adopt four people into the society if we wanted to, but we did not adopt anyone. It was customary for a person to tie one plume to the back of his head for each man he had adopted.

Hidatsa and Mandan mingled in this society.

Maximilian's Report. The Medicine Pipe ceremony of the Mandan is briefly described by Maximilian. From his account it appears that the owner would get the suggestion to initiate a certain novice through a dream, but the young man must belong to a prominent family or have struck a coup. He secures two pipestems and after gaining the novice's consent drills two young men in the motions of the dance. At the time of the adoption the 'father' and his relatives visit the 'son,' bringing gifts of corn, cloth, and other valuables. The 'father' makes his 'child' sit down, whereupon the dancers perform with the Pipes to the accompaniment of drums and rattles. After the ceremony there is a distribution of gifts, then the adopter raises the novice from the ground, clothes him from head to foot in new raiment, and decorates him with paint. Henceforth these garments and the Pipe are his and he is obliged to act as a real son towards his initiator, supporting and protecting him.[1]

THE CROW RITUAL

Origin of the Pipe. As already explained, all the Crow admit that this medicine was borrowed from the Hidatsa. The following account of how it originated with them was obtained from Pretty-horse.

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[1] Maximilian, Prinz zu Wied, *Reise in das Innere Nord-America in den Jahren 1832 bis 1834* (Coblenz, 1841), vol. 2, 167 seq.

Ten Hidatsa were out on the warpath. They entered a Dakota camp and raided horses. They started homeward. When already far away, they were overtaken by the Dakota, who recovered their horses and killed all but one Hidatsa. This man was obliged to travel on foot. For four days he continued his journey and during the fourth night he heard coming from the west the sound of a drum as in the Pipe dance. Two nights later he heard the same drumming, but closer at hand. On the seventh night he heard it plainly, also singing and shouting. He was traveling homeward. During the eighth night he did not sleep at all. He saw people. A pipe about three feet long was lying with its head up. The stem was wrapped with white and blue beads; at intervals bunches of owl feathers were tied along the stem. Duck said, "I want to be in it too." So they stuck the mouthpiece into a duck's neck. Horse wanted to be in it, so he gave the hair from his tail to be tied about the middle of the stem. A person wanted to be in it, so a lock of his hair was taken and tied on. Thunderbird said, "I don't see how I can get into it; I'll make them dance." So he became the drummer, and his thunder is the drumming. Smoke wanted to be in it, so he gave his tail for the rattles. Dog said, "I don't care for anything, I have my nose poked into everything. If I am in it, the dance will not be very serious." Even now when the dance is performed, a dog always comes there. The Hidatsa got home. This is how the Pipe dance started.

Bird-above's story was as follows:—

There was once a very poor Indian. One day someone came and gave him a plume for his head, and then a long pipestem with all sorts of feathers tied to it. The Indian did not know the being who gave him this and thus helped him. The visitor said, "Whenever you want anything, ask this long pipestem for it and you will get it. Some other time this pipestem will tell you what will happen beforehand, about bad times in the winter and about storms." Other Indians found out about the pipe and some wanted it. One day the owner took corn of different colors, stuck a plume on top of it, and inserted a long stick at the bottom for a handle. The owner was a well-known man among his people. He did not want to give the pipe to anyone, but when some who wished to become great asked for his medicine he gave them a new pipe patterned on his own. They would promise to give him in return, their best horses. When anyone was sick, the patient's relatives would say, "If he gets over his sickness, I'll buy the pipe and join him." They wanted to be adopted by the owner. The pipe-owner hearing about it would take his pipe and talk to it as follows: "So-and-so is sick, and they want to get the pipe if he recovers." If thereafter the patient recovered, the owner would set a date for the adoption. Then he made a new pipe for those who wanted it. He would say, "Don't try to give this away unasked, let them ask for it. You'll be just like me. Whenever they ask you for it, don't refuse it to them." Thus adoption into the Pipe ritual started.

Motives for Adoption. The reason most frequently given for the desire to own a Pipe is serious illness on the part of a person or one of his closest relatives: the individual vows that in case of recovery he will get himself adopted by the owner of a Pipe.

Pretty-horse so pledged himself when his father was threatened with death. Bird-above had a son at school who was always sickly, so that much property and many horses were spent in doctors' fees. He could never eat a good meal. His father could not sleep on account of the boy; he was constantly losing property. Sometimes white doctors were called but they failed to cure the boy. An elder brother of his had suffered from the same disease and died. One night the boy was vomiting and at the same time easing himself. He almost died. His father rolled him up in a blanket; his body was still warm. A good many people were inside and said it was still warm. Then Bird-above told them that if the boy got up and recovered he (the father) would get adopted by the first Pipe-owner who should ask him. A few days later the boy rose from bed and began to eat. He got over his illness and was able to ride about. Bird-above waited for some time to hear from someone offering to adopt him. The boy came pretty near falling sick again. Then his father went to a man and told him he desired to be adopted by the Pipe-owners; that no one had offered to initiate him; and that accordingly he was asking to be adopted, and that as soon as possible. The Pipe-owner said, "It is well, I will give it to you;" and he adopted him on that very day.

A second reason is given by Gray-bull. When a war party is in sight of a hostile camp at night, one of the members would publicly declare, "If I get a nice gelding, I shall own a pipe" (*burɛ́ ítsik·ā̀tem burutsírək, ī́ptse bḗwik·*). If his wish is fulfilled, then on the first night of the homecoming the vow is made public in camp.

Most people were afraid to own a pipe for fear of breaking some rule connected with its use.

The Adoption. According to Scolds-the-bear, who was initiated by Big-medicine, the adoption may take place at any season of the year. When the conditions laid down by the pledger have been fulfilled, a Pipe-owner presents him with eatables. As soon as this has been done, the candidate calls the adopter his 'father' or 'mother.' On a subsequent night the 'father' invites all other Pipe-owners, also the novice and his wife, and has nice blankets spread for the Pipes. They insert two pipe-stems into the ground at a distance of about a foot from each other and place crosswise in front of them a common pipe filled with tobacco. The stems are decorated with eagle feathers and corncobs. In the Pipe bundle there is some sweetgrass. The pipe-lighter takes some, burns some for incense and holds the common pipe over it. Then he points its mouthpiece towards the Medicine Pipes and the four cardinal directions, and passes it to all present; all of them smoke until the tobacco is exhausted. The Lighter takes a second piece of sweetgrass, makes incense, takes four drums piled on top of one another, and smokes them. They take the drums and beat them. They sing four songs, each four times, making sixteen in all. During the singing the adopter and his wife sit by the novice and his wife and gently sway them. After the singing eatables are served and they eat with the 'child.' These preparatory meetings take place on four evenings.

Finally comes the time of the adoption. Two large tents are joined for the lodge, and at a short distance from it is the preparatory lodge. The Pipes are spread there. They take in fine clothes for the tyro and his wife, who dress in ragged clothes and hide in some tent. A buffalo skull is taken and carried a good distance from the camp; they carry it by means of a cord made from braided grass of the wide-bladed variety. Then they go through camp looking for the two best dancers among the young men; to each of these is given a Pipe and they stand at the door of the preparatory lodge. The rest sing and the dancers dance outside. The 'father', holding a knife, an old ax, and an awl and probably a second ax and awl, leads the way to the skull, followed by the Pipe-owners and dancers. After arriving at the spot, the singers sit facing it at some distance, while the dancers stand in front of it and 'father' and 'son' sit on either side of it. A war-captain recites a coup: "I went to such and such a tribe and brought back a scalp" (or some equivalent exploit). Then the warrior takes the knife, points out the direction in which the event took place, punches a hole into the ground behind the skull and keeps the knife. The dancers do not sit down but gently sway the Pipe. Four articles are each taken by a war-captain who recites a coup with it.

The party leave the skull and return to camp to seek the novice. Women walk behind the men, helping them sing. They sing four songs as they go round the camp in search of the candidate. At last they find his hiding-place, halt at the door and point the Pipe at it. A song is sung and a war-captain recites aloud four of his coups, whereupon he steps aside and the dancers enter, followed by the Pipe-owners. They see on which side the novice sits, walk round from the other direction and offer him the Pipe. He takes a puff. They say, "This very day you will own this Pipe." First the dancers, then the owners and finally the 'father' takes the novice by the little finger of his right hand, while the 'mother' takes the corresponding finger of the left hand. Thus they make him march around and then go outside with him. The adopter has the privilege of asking someone to appoint a skull-bearer. This officer marches behind the owners but in front of the adopters. The skull is painted.

They now march to the big lodge, enter it, and circle round four times, whereupon they take seats in the extreme rear. The skull-bearer sits at the extreme left of the circle, the two dancers at the extreme right, all the others in between. A herald announces that the tyro's relatives should bring spreads for the skull, and they hurriedly bring fine blankets, on which it is gently set down. Then the crier summons the relatives to bring gifts, and they deposit them before the skull. Two Pipes are planted in front of the dancers. As soon as the singers begin their music, the dancers dance with a Pipe in the left hand and a rattle in the right. The presents piled in front of the skull are distributed by the adopter, the rest belong to the skull-bearer. All the horses brought fall to the adopter's share.

The 'father' says, "Well, let us bathe (cleanse) our child." He takes bunches of pampas grass and crosses two of them at right angles. Next they look for the striker of an undisputed coup. The Pipe-owners place a pail of water there, to which the 'father' takes his 'child.' Then the candidate steps on the crossed grass and the coup-striker, standing to the right of him, recites a deed. The adopter takes a Pipe into his right hand and a cup into his left, holding it over the head of the 'child.' The coup-striker holds an awl in his hand. As soon as he has done, he touches the bottom of the cup with the awl, whereupon the adopter gently tilts the cup over the novice's head and wipes it with the cob of the Pipe bundle. Then he takes a whole roll of calico to wipe the head, afterwards throwing it towards the door, where the people scramble for it. When the first coup is recited, the candidate stands at one point of the cross; for the three following coups he occupies successively the other points of the cross in clockwise order. Finally they take the novice to the rear of the lodge, where he is to be dressed. All the owners congregate there, form a curtain with blankets, and paint him up according to the adopter's style. To his head they tie eagle plumes from the Pipe. Then they take their seats again and finally march to the novice's tent, where a feast has already been spread. The skull is taken to the outskirts of the camp, where it is not likely to be trodden on.

In the novice's tent the Pipes are placed in a position corresponding to that previously occupied by them; the singers sit in the rear, the novice at the extreme right, the dancers where they please. The 'father' takes a piece of meat, and moves it in a circle before him while the musicians are singing. This episode symbolizes the feeding of young eagles: the novice throws out his hands and four times moves his mouth in imitation of the young birds. At the fourth time they allow him to take the food, then the adopter serves the rest to those present.

Next they order the tyro to hunt for a long lodge pole and point it towards them. The point of the pole is laid inside the lodge. The 'father' takes the Pipe and hands it to the novice, who grasps it, whereupon the adopter puts both of his hands round the novice's and after four songs have been sung he says, "Now I give it to you." The novice ties the Pipe to the point of the lodge pole and places it among his tipi poles so that it can be seen waving there. It is left in this position for the remainder of the day. In the evening the novice goes to his 'father,' who takes down the Pipe and places it in the rear of the lodge above the draft-screen. In the morning the novice again goes to his 'father,' who puts it back among the lodge poles. This is continued for four days in succession, whereupon the 'father' wraps up the Pipe and puts the bundle crosswise above the draft-screen saying, "It is yours, it is not mine any longer." Then the novice is the real owner.

Thereafter, when a person gets sick, he may make a promise that on recovery he will feed the Pipe. The convalescent would visit the Pipe-owner, who would call the other owners, and they would sing and have a jollification. War captains would take the Pipe on their parties and tie a lock of the enemy's hair to it.

A pipe owner who adopts a 'child' makes a new Pipe for himself. He has the right to adopt four times, but with the fourth time he relinquishes his ownership. Hence many cease with the third adoption in order to keep their Pipes for life.

The Pipe-owners did not form a society but merely a group of intimate friends who would have joint feasts. At Lodge Grass there were from six to ten owners (1911).

The corncob and the pipestem are both painted blue; the former is regarded as female, the latter as male. They are tied together with hair from the mane of a buffalo. The stem is decorated with feathers at the mouthpiece. A redstone bowl belongs with it, but during the dance it is taken off lest it should drop; in giving the novice smoke they put it on again.

While other accounts substantially corroborate Scolds-the-bear's narrative, there are some interesting amplifications and differences. Since these are not always readily wrested from their context, I append two other accounts in full.

According to Gray-bull there were four nights of preliminary instruction after the pledger's vow had been made public. On the first there is a feast of buffalo tongues and the Pipe is laid on a hide in the center of the lodge. This is repeated on the next three nights, and on the last of these the Pipe is taken from the bundle, a bowl is put on it, and all present smoke from a single filling.

At the adoption there is a preparatory tipi. The Pipe-owners leave it with beating of drums and singing, while one dancer holding a Pipe dances in front of them. The 'child' remains hidden in a tent. The party walk round raising the door flap of every tent in search of the novice. All walk abreast except for the dancer in front; one man bearing a buffalo skull is on the extreme right. When the singers, whose number is not fixed, sing, the dancer dances. At last the 'child' is found. Then four men who have struck coups in an enemy's tipi are selected to lead out the novice. Four songs are sung, then they enter. The first one cries *hahɛ́* as if actually striking a coup and gently taps the tyro's shoulder. Gently raising him, he proclaims that on a certain war party he entered a hostile tent whose inmates were asleep, and struck a coup The second warrior in turn seizes the novice's arm and tells of how a party charged the enemy and how he struck a second-coup against a fleeing enemy and captured his gun. The third brave grasps the arm of the 'child' and recites a first-coup counted in a charge. The fourth warrior tells of killing an enemy and capturing his gun. At the end of his recital each warrior expresses the hope that the 'child' may fare well. The last speaker takes the child by the hand and leads him out, one warrior holding him by each arm. They take him toward the adoption lodge without any singing.

When they have entered the adoption lodge, the skull-bearer stands in the center; the skull is taken from his back and laid on the blankets. Those who are ready bring presents, which are always placed under the skull and appropriated by the skull-bearer, who is usually a close relative (*akúpe*)[1] of the adopter's. Then the dance commences. The performer, who is dressed in his best clothes, is chosen for his skill and need not own a Pipe. By way of encouragement the spectators clap their hands to their mouths. When the music begins, the dancer goes to the door, returns and circles round. Four songs are sung while he dances in lively fashion. After the fourth he lays down the Pipe on a new quilt. Then those present smoke from an ordinary pipe. One of the four warriors rises, stands by the novice, and tells publicly of his deed, whereupon he takes an awl and touches the novice's ear. They next take a cornstalk and tie it to a willow stick. The novice's face is painted on both sides with a representation of the Pipe. They rub the corn down his face. His family sit behind him and are painted red on the forehead and on each side of the face; their faces are stroked in the same way,—on both sides of the face, vertically in the center and in the back. Then the initiators take new calico, dip it into water, and 'wash' the novice by dropping a few drops on top of his head. The calico is cast aside and may be seized by anyone. A new piece of calico is used for every member of the family adopted.

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[1] Sibling, or a person to whom the term is extended. See Lowie, this volume, p. 60.

The pipe is smoked with *isé*, sweetgrass, or some other form of incense. The dancer takes it and points the bowl and then the mouthpiece, each twice, down toward the incense. The black flannel covering is smoked and wrapped round the Pipe, to which it is tied with buckskin and otterskin. The novice's wife is taken beside her husband, where they sing with her, finally attaching the bundle so that it hangs down her back. The skull-bearer and those adopted by him in the past throw to this woman the most valuable gifts, even an elk-tooth dress. The novice's relatives distribute horses. All pass out. Thereafter, whenever the camp moves, this woman will ride a fine horse and carry the Pipe on her back. The novice might now adopt anyone by going through the same ritual.

The preliminaries, according to Gray-bull, were gone through in the winter, while the adoption itself takes place in the summer.

Pretty-horse's narrative likewise introduces a number of novel features.

The four nights of preliminary instructions represent the four nights of the Hidatsa founder's journey (see above, p. 340). On the fifth day the adoption lodge is erected. The owners go to the candidate's lodge and make him produce five fingermarks on the ground with the knuckles of his clenched hand. In the little depressions thus made the 'father' smokes pine-needle incense. They take the 'child' out to the prairie, where he is made to leave similar knuckle prints, and send him homeward. All this time the musicians are beating drums. When the novice sets out for his tent the two dancers follow him, dance up behind him, then get beside him, cross in front and dance to his rear again. When he has arrived at his tent his adopter brings him the Pipe and gives it to him to smoke. After smoking it, the 'child' returns it to the 'father,' who walks out. The candidate runs out and hides, no one being supposed to know where. This feature represents the deer putting away her young somewhere to go off and returning to them in the evening; similarly the 'father' is expected to find his 'child.' He inquires for the novice and finally finds him. All the Pipe-owners circle about four times in the lodge, then the 'father' takes his 'son' by his little finger and leads him around four times to the accompaniment of drumming and singing. No one is permitted to enter the child's lodge except men who have entered an enemy's tent or counted coup on it. One man carries a skull by means of a sweetgrass cord. Immediately after their entrance into the lodge they hand to the candidate two ears of corn, then they lead him around by the hand four times, the 'father' never releasing his hold. The novice, holding both ears of corn in one hand, is then led to the adoption lodge. He is again led around four times inside, then he sits down. Two Pipe-owners come near him and rock him as though he were a baby. The drums are beating all this time. Four times they dance and sing. Everything is done four times. Then the candidate's relatives bring horses, quilts, and other property, all of which is appropriated by the 'father,' except that the dancers are allowed to choose any four articles. The candidate has the buffalo skull, the Pipe and the corn stuck on a little stick, also a little feather (plume?). Two pairs of parallel blades of grass are laid down perpendicularly to each other, and on the central square thus formed, which represents the springtime, the novice is made to stand after being led round it once by his little finger. Then an old man is selected who recites one of his martial deeds. Next a little water is poured on the candidate's head and he is twice led round the tipi. He is 'baptized' again, then they lead him round three times. The next time he is 'baptized' they lead him round four times. He is 'baptized' a fourth time. Each time they pretend to pierce his ears as though he were a little child. After water has been poured on him, the 'father' uses quilts and calico never before used, or even money, to dry the head of the 'child,' then the property is thrown away. This represents the actual cleansing of a newborn infant.

Then they return each to his own lodge and the 'father' brings the best food he can obtain to his 'son'; this represents the parent's giving a child the best things they can when it is old enough to eat. For a corresponding reason the 'child' gets fine moccasins and leggings from his adopter. Thereafter the 'father' treats his 'son' as though he were his real father. Wives are adopted with their husbands.

The 'father' gives his own Pipe to the 'child' and makes a new one for himself.

The dancers held a Pipe in one hand and a rattle in the other and at the close of each song they would make a cross with these two objects.

There are only about twenty-six Pipe-owners among the Crow now (1910).

Some additional details were gleaned from other sources.

When Bird-above was initiated with his wife and his ailing son, he was asked to prepare the water and to furnish awls and a butchering knife. There were six drummers, including some who did not own Pipes, and a single dancer who performed seven times. The first brave to recite his coups had a big awl in his hands, with which he touched the novice's ear at the close of his narrative, pretending to make a perforation. A second warrior had a knife while telling of his exploits and pretended cutting the navel-string of the 'child.' Big-medicine is the principal Pipe-owner now (1911).

Bear-gets-up, besides giving an account of the adoption closely similar to that of Pretty-horse and other informants, furnished the following description of the Pipe. The stem may be either flat or round. To the mouthpiece is tied a red-headed woodpecker skin, below which red or blue horsehair is made to hang down. Below the woodpecker is a wrapping of quillwork, then follows an eagle-tail dropping fan fashion. The Pipes are wrapped in red or black flannel, sometimes in a buffalo calfhide and hung outside over the door; in case of rain they are taken indoors and suspended from the tipi poles opposite the entrance.

According to the same narrator, the other Pipe-owners drum and sing at the adoption but not the 'father'. The Pipe is said to belong to the Sun and people are afraid of it. If the police were disciplining people by cutting up their tents and a man carried a pipe round his dwelling, they would go off without touching the lodge; Bear-gets-up did not know whether it was necessary that the man should be owner of the Pipe in such a case. Again, if the kinsfolk of a murdered man seek revenge, the police will pacify them by offering them a Pipe: they will smoke it and at once abandon their design. That the Pipe figures as a peace pipe is further illustrated by Gray-bull's statement that if in a battle with the Dakota an enemy approached the Crow with a Pipe no one would dare molest him.

In confirmation of other data Bear-gets-up says that the Pipe dances were performed only at an adoption. However, a feast in honor of the Pipe might be made on other occasions by one of the owners who would plant his in the ground and invite other owners, who would not be obliged to unwrap their bundles. At these festive gatherings they merely sang without dancing.

There is a rule, says Bear-gets-up, that a Pipe-owner desirous of adopting a certain person will bring him food without telling him of his purpose. When the gift has been accepted, the owner reveals his object, for then it would be unlucky to decline adoption.

COOKED MEAT SINGING

The Cooked Meat Singing ceremony (*irū́koce waraxúə*)[1] is neither a dance nor the performance of a definite organization. It was a feast arranged in consequence of a dream and attended by specially invited guests, who were requested to bring with them any medicine rocks (*bacṓritsiʻtse*) they might have. The prayers to these stones, ceremonial songs, use of incense, and performance with the bear effigy give a ritualistic aspect to the proceedings, while the distribution of food and presents of all kinds lend to the occasion a social character as well. According to Gray-bull the ceremony was sometimes pledged, performance being made to depend on a relative's recovery from illness. This statement was only made by one other witness, so that I cannot regard a vow as normal in this connection but merely as showing the occasional application of a pattern established for other ceremonies (Tobacco dance, Medicine Pipe) to the Cooked Meat Singing.

I will begin with Gray-bull's generalized account.

They saw it in connection with the ripening of berries. Then the visionary would select a circle among the berries and have it prepared in the usual fashion.[2] At the time of the first snowfall he would ask a war leader to bring him buffalo bones and to sing at the time of the ceremony. In the winter, when it was cold enough to freeze pemmican, the feast took place. When there was a buffalo hunt, they took the flesh on either side of the backbone, this being the tenderest part. This formed a strip about four feet long and served for the pemmican. Next the man who was calling the feast asked for the bones to be smashed in order to obtain grease which they might mix with the pemmican. The wife of the visionary got four other women to help her boil down the bones. They would soak the berries in a large tub and mix the dried meat with them. One woman would take the smashed bones, put them into a kettle and skim off the grease; another stirred the skimmed grease with the meat, the third kneaded the material supplied by the second into big loaves; the fourth maintained the fire, brought water, and threw away the bones after the extraction of the grease. The host moulded some of the pemmican into a bear effigy, poured grease over it, and sang over it. Then they poured grease over the rest of the pemmican and made portions corresponding in number to the invited guests, four meat-balls being allotted to each. About twenty people were counted on and for each a stick was painted red and placed behind a lodge pole. These sticks were then taken out and a messenger invited the guests, one by one, saying, "Here is your stick, I sing for you." The guest answered, "Thanks!"; then he would express a wish for his own and the host's prosperity.

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[1] *irū́ke*, meat; *ṓce*, to cook; *baráxik*, he sings; *baraxū́ə*, singing.

[2] This statement is obscure. Other data indicate that what is probably meant is that the berries are picked from a particular clump of trees and prepared in customary fashion.

The guests came with their wives, who would sit behind their husbands so that the lodge was pretty well filled. All brought gifts for the host, also their *bacṓritsiʻtse,* which were laid on a calfhide and incense burned. Four cow chips were placed between the hide and the incense. The head of the calfhide was pointed towards the mountains. The stones were passed clear around, each one pressing them to his body and expressing a wish. A rattle was shaken over the incense four times, then it was placed next to the host's neighbor, who would give presents, such as guns or powder bags, to the host and then to his father's clansfolk. A pipe was lighted and given to a war leader, and for such a one the fire was put out and an order was issued for everyone to keep still. The one next to the door would proclaim it outside, where young men and their sweethearts would lie listening. The captain and his wife would first sing one or two songs belonging to his own military society, next scout songs he had himself heard in a vision, then the song of a retiring war party, then that of a war party 'making the women dance,' then the song of warriors showing off, next his personal medicine song, finally praise songs he himself had heard in praise of the guests. Then the fire was rekindled, the captain sang another song, shook the rattle and placed it in front of the host.

Whenever anyone got up to sing, incense was burned. First four captains sing, after them anyone may do so. There is a special tobacco-lighter, who is usually a captain's son. When the pipe has been emptied, this officer holds it out, saying, "Take back your pipe." Then the owner of the pipe seizes it and while both men are holding it the owner brushes with his left hand down the lighter's shoulder to his hand before taking the pipe. The lighter expresses the hope that they may live to see the leaves out (or some other season of the year), whereupon the pipe is simply lighted and passed round for a common smoke. When the singing is over, the rattle is given to the host, who smokes it with incense, and the bear effigy is put in front of the door. Then anyone present who has the bear for his medicine puts a stone round his neck, takes a rattle and sits by the effigy. Assisted by his wife, this man would sing four songs to the meat, stretching his left hand toward the pemmican and shaking the rattle with his right. The meat song always referred to the bear. Then he would rise and take his own seat. The host never sings.

Next the pipe-lighter was called and he with the assistance of one of his relatives distributed pemmican among those present. He would cross his arms in distributing the loaves, so that the person at his right got the portion held in the distributor's left hand, and *vice versa*. Anyone might give a horse to a father's clan mate and receive from him in return his share of pemmican. For the smaller portions the people would pay blankets. The *bacṓritsi'tse* were first smoked with incense and then returned to their owners.

Two additional narratives supply supplementary details.

It seems that the dreamer issued sticks to the guests invited, and these were then expected to bring buffalo meat and bones from the hunt, have them prepared by their wives, turn everything over to the hostess, who would boil the bones and skim off the fat, before which latter operation an old man was called in to sing. After the preparation of the meat loaves in different sizes, the old woman went to the lodge of each guest repeating the formula, "I sing for you," which had also been used at the initial invitation. The guest thanked her and delivered himself of the stereotyped prayer that he and the hostess might live to see a certain season of the year. In thus summoning all the guests on the night of the feast, the hostess collects the invitation sticks and carries them to her lodge. As soon as a guest arrives, one stick is removed from the batch, and if anyone is late the rest will wait for him. A person who is prevented from coming may send gifts to the hostess, who will then send him pemmican in return.

After depositing the *bacṓritsi'tse* on the calfhide the host takes a pronged stick, points it in the direction of some hostile tribe and says, "I have poked it into their eyes" (*ictúə wapaxáxik·*). He first lays the rattle in front of the man sitting immediately to the left of the door for one entering, who gives presents to the hostess and his father's clansfolk (*ā́sa'ke* and *isbāxíe*), whereupon his wife gives gifts to her paternal kin. The door man then sings as previously described. Next the host fills a pipe and gives it to a captain,[1] who smokes and passes it on to the left; those seated on his right do not get the pipe to smoke.

There was a good deal of laughter if one of the singers made a mistake. When a man sang, his wife was expected to accompany him. If she failed to do so, her joking-relatives would say, "What is the matter? Is she dumb (*irī́-se*)?"

When all the guests had retired in their lodges, the members of the military societies would gather round the door of a guest's tipi, sing their songs four or five times, then enter and build a fire. The woman of the tipi would then distribute all the pemmican among them and they would generally consume it all.

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[1] It appears that the first man to sing is also a captain.

Though the informant just quoted spoke as if an old woman normally arranged the ceremony, he recollected conducting one himself on the occasion of his wife's illness.

The same authority mentioned a sort of mock performance by the Lumpwood or Fox society. This was celebrated not in the winter but in the summer and without a preceding dream. They would not sing with their wives but with their mistresses and had no *bacṓritsiʻtse.* However, the young men generally had necklaces of medicine stones and would use these. Generally the meetings took place in a new lodge. Pudding was eaten on these occasions.

According to the second supplementary account the host chooses close relatives of his to sit by the door and prepare the pipe,—generally the children of his clansmen (*icbā̀pítuə,* literally, his grandchildren[1]). After everyone has kissed the *bacṓritsiʻtse,* they are returned to the owners except that the pipe-tender keeps one stone with a necklace, which he subsequently puts on when distributing the pemmican. According to this informant the seats to the left of one entering the lodge are reserved, usually to the number of ten, and are purchased from a father's clansman for a horse. As a rule children were not taken to this ceremony, for if they are the father must pay a horse to a clansman. After the distribution the host begins to sing songs praising those who have given him horses. The men who got horses from a clansman's child give the biggest loaf portion to this child, thanking it for the gift.

According to Small-rump, no one walked in front of the guests; it was necessary to pass behind them. When a man received the pipe, the proper sequence was for him to smoke, give a present (formerly clothing, now a quarter or a half dollar), sing, return the pipe to the pipe-bearer, and then tell his dreams.

Muskrat's account is of value as representing that of a woman and one who herself acted as hostess:—

> I had a dream and saw a bear. This bear was dancing towards a chokecherry bush. When he got there, he ate the fruit of one bush. That is why we sing over the meat. We pick chokecherries, mash them, and spread them on a good carpet. We wash them, put the fruit into a good bag, and hang it up to dry. Then we call for old buffalo bones. We go to young men who have fasted and dreamt, and say to them,

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[1] Since the native term for "grandchild" is used only non-vocatively, while in direct address child and grandchild are designated by a single term, a transfer of meaning such as is noted above becomes intelligible.

'I sing for you' (*bawaráx barakúk*). Then about twenty-six or twenty-eight[1] of them came to my lodge. I told certain persons to take portions of dry meat and bones, mash them up, and bring them on a certain day. We put up a large tipi, and carpeted it with white sheets. The young people brought dried meat and bones, which we laid together. I had a rattle and swung it towards the bones. Then I sang in praise of some brave. A kettle with hot water had been prepared before. I took a long-handled dipper, sang four times, then put the bones into the kettle. While they were boiling, I called for different women, who went for water. Later I took a small bucket, and ladled off possibly as much as four bucketfuls of soup and grease. Next I took the chokecherries, put them in four large buckets, and poured first soup, and then grease over the fruit. Women had been told to pound the cherries. About six women came up saying, "These chokecherries are medicine, and I must have some to eat." Then they sat down outside the lodge. A large skin was spread for the meat. I took my rattle and again sang songs in praise of the braves. I had an image of a bear about a foot long and cut out of dried meat, and set it before the dry meat. Then I danced towards this effigy. I put soup on my footprints, as well as on the bear's face and back. I mixed up the mashed dry meat with chokecherries, and prepared twenty-eight loaves of pemmican for the guests. Then I prepared twenty-eight smaller loaves. The third time I made still smaller ones, and the fourth time I made the portions smallest of all. Next I called old women and little children and gave them some meat that had been set aside previously.

To each of the twenty-eight men that I had invited by the formula *bawaráx barakúk*, I gave a stick, and told them my dream. Later they told me they had had a dream, such as seeing the next year without sickness or death. Then I went to different lodges and invited the people there. We killed the fattest steer we could find. I spread a large canvas and put the four sets of twenty-eight portions on it. The people came with their wives and children. There were twenty-eight, I counted them; I took a stick about four feet long, placed four chips along its length, and a calfskin over the chips, with its head end towards the mountains. Next I took *isɛ́*, smoked it, and called an old man to prepare a pipe. I laid a forked stick on the side of the skin. The old man pointed the fork, first north, then west, south, and east, respectively. Besides the chips mentioned, there were some additional ones laid aside. The old man took these up with the fork, and put them on the fire, smoking them with *isɛ́*. I called on the guests to bring up what *bacŏ́ritsiʻtse* (sacred stones) they had. The first one said he had none. The second one wore one around his neck. He kissed it, placed it on his breast, at the same time wishing for horses or money. I fixed a bed for the stones, which were passed down the entire circle of guests. The other guests with stones did what the first had done. They took off their earrings and beads and passed them down to be offered to the sacred stones. They passed down fine kerchiefs, to be tied round them. The rocks were placed on the calfskin. We smoked the *bacŏ́ritsiʻtse* with incense and returned them to their owners, but the gifts remained on the skin. Hot ashes were placed by the side of the skin, incense was burned and the rattle was smoked. Then the rattle was swung over the head, and laid before the first brave man, who proceeded first to distribute his money, blankets, and other property among his nearest relatives, and then gave presents to his father's sister. Next he took a rattle and sang. The other guests gave me property, even including horses. The brave told of his deeds against the enemy, and sang medicine songs. He swung the rattle over his head, and passed it to his neighbor. The *isẹ* was smoked again. The neighbor did not take the rattle before giving me a present. He also gave away property to his father's and mother's relatives. The wives of the braves did likewise. The other guests followed in turn until the rattle got to the last one. One of the women had taken her baby inside. Her husband rose and said, "This baby has given a horse to its father's brother." He sang a Fox society song, then he bade his wife give property to her mother's relatives. He swung the rattle over his head and laid it down in front of his neighbor. After giving away property, he took a large feather, and put it in front of his face, took the rattle and sang. Young men did not touch the rattle before giving away presents. If they had no horse to give, they gave away a gun, blankets or beadwork. Then they said, "I wish I should go to war and capture six fine horses. After this ceremony I will go and take those horses I took in a dream." Next the guest began to sing. A war leader would say, "I want to sing, put out the light." He had a boy there and announced, "This boy has given six dollars to his uncle." Then he ordered his wife to distribute property among her relatives. When the lights were out, the captain took a gun and powder sack, and gave both to a father's brother, saying at the same time, "I give these away because I want to sing." After singing, he gave from a quarter to a dollar or so to each of a number of relatives. Each time the rattle was put in front of anyone, *isẹ* was smoked. The next war leader said, "Look outside whether any horse has been brought over." Looking outside they saw a horse. The captain said, "I give it to my uncle. I want everyone to keep still, so I can sing." He gave me blankets and other goods, shook the rattle, and passed it on. The next brave said, "I will give a war-bonnet to my uncle. I want to sing." He gave me beadwork, money, and two horses. The next one said, "I will give a horse to my uncle. I wish you would keep still while I sing." He gave two dollars to his aunt[1] and, three dollars to me. His wife gave away cloth and blankets to her relatives. The next one gave a fur overcoat, a blanket and five other pieces of property to his relatives, and his wife gave them cloth and beadwork. He gave me a blanket. The next one gave away two sacks of wheat and also two of oats, also a blanket, a dollar, and a pair of leggings. The one following presented me with a blanket and five dollars, and his relatives with five different pieces of property. The next one gave me a dollar and a blanket, and the one after him a quilt and a piece of cloth. The last one was a war chief. He gave away six pieces of property before singing. To me he gave two dollars, a sack of wheat, two sacks of oats, a good blanket, and a parfleche. He returned the rattle. *Isẹ* was smoked. I sent for the pemmican, put it in front of me, and laid the rattle down. Both the rattle and the medicine rocks were smoked with *isẹ* incense. Then a good person was called upon. He took one of the stones around his neck, sent the rest of the stones back to their owners, sat down and smoked a pipe. One of the twenty-eight guests had the bear for his medicine. The rattle was swung over his head and given to him. Pemmican was spread before him. Then this bear-medicine man got on his knees, swung the rattle, and sang four bear songs. Each time he put his hand to his breast and made a noise. After he had gone to his seat a young man distributed the large loaves of pemmican, and then distributed the sets of successively smaller loaves among the same people. The guests divided the hash among their relatives,—those that had received horses from them before. I got two horses and two big loaves of pemmican. The hash was finally given to the sweethearts, sisters, etc. of those who received it.

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[1] Later she gave the number as eighteen; the error may be due to the interpreter.

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[1] See p. 352, footnote.

In conclusion, Muskrat said that the entire ceremony consumed three days, one being devoted to getting the chokecherries, another to the performance with the bear-effigy, and the third to the *bacṓritsi·tse* performance.

Another account was furnished by Sitting-elk.

Once my wife dreamt of having the ceremony and told me about it. The next morning I notified the people, requesting them to get buffalo bones. I got some bones myself. The meat was cut off the bones. I went around to each guest, bidding him mash the bones up fine; I did the same with my own. All the mashed bones were brought to my tent. I bade the people cook meat. My wife put the bones into a big bucket and boiled them, then she collected the fat into another bucket. Each guest brought his meat in a sack, and my wife poured fat over it, soaking it thoroughly. Then this meat was carefully stowed away. After dark I went to the lodge of each meat-pounder, and from the outside said, "I sing for you." After I had reached home, all the guests came with their wives, and sat down in my lodge. I had a buffalo-calf skin spread between the door and the fire. I had requested my guests to bring whatever *bacṓritsi·tse* they had with them. Beginning at the left side of the door, they passed their stones from hand to hand. I took the first one, laid it on the calfskin, and smoked it with *isɛ́* incense. I did the same with the others, laying them down one beside the other. To my neighbor I gave a round rattle, which I had smoked, and bade him sing. They gave him a pipe to smoke. Then, before singing, he gave me a present. He began to sing. Each man sang a song in turn,—some chose war songs, Fox or Lumpwood songs, others medicine dance[1] songs, etc. So the rattle passed from hand to hand. When a war leader got the rattle, the fire was put out while he was singing. He also received a special pipe to smoke, and this was offered to only four men present. After smoking from it the captain held it in both hands and rose. I walked over to him and seized the pipe. He said, "I dreamt that you and your family would meet another year in good luck!" 'Thanks!' (*ahṓ*) I replied, then I took my seat. The songs were continued until the last man had sung, then the rattle was returned to me. I smoked it once more, and gave it to my neighbor. They pulled the meat over for distribution. My neighbor sang a bear song, facing the meat and holding out one hand, palm down, towards the meat and divided it among the guests. The *bacṓritsi·tse* were returned to their owners, and all went home. There were portions of four grades of size, and each guest received one of each. Before singing each guest gave away property to an uncle or aunt.[2]

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[1] Sun dance, probably.

[2] This doubtless should read paternal uncle or paternal aunt in consonance with the Crow principle that the father's clansfolk are preëminently entitled to gifts.

THE BEAR SONG DANCE

The Bear Song dance (*naxpitsɛ́ icū́orisúə*), of which Curtis has published a very brief account,[1] was not performed by an organization, but united all those harboring in a mysterious manner an animal or some object in their bodies. These individuals on hearing the song of the dance were automatically compelled to show the object or a part of the animal in question to the spectators. The mysterious inmate is called *bā̆tsirə́pe* (Hidatsa: *ìtawākírupi*). Its exhibition was made in a trance, from which bystanders made the performer recover through an application of incense. Similar usages were observed by Maximilian among the Village tribes of the Upper Missouri.[2]

The acquisition of a *bā̆tsirə́pe* is in connection with visionary experiences. Gray-bull thought it might enter a person's body if he kept medicine in his hair or that the self-torture inflicted by dragging buffalo skulls might result in an internal growth of this sort.

The more usual theory is that when an individual fasts in quest of a revelation he may dream that something enters his stomach and subsequently the animal or object may be exhibited. Almost any kind of animal or bird might go into a person in this manner. Arm-round-the-neck knew a man who had no less than five *bā̆tsirə́pe;* indeed some said he had a horse's tail for his sixth, but about that my informant does not know from personal knowledge. He has, however, seen the man exhibit elk chips, white clay, black dirt, owl feathers, and ground moss. The owl feathers were shown with a plume. The performer would allow no one to touch him; if they did, elk chips would come out of his mouth and he would go into a trance. Then the spectators would light a powder and make him inhale the smoke to make him come to. Those who displayed horse's tails owned many horses; the exhibitors of buffalo tails would doctor wounds.

Big-snake has seen individuals having a *bā̆tsirə́pe* pull out of their mouths parts of a jackrabbit, snake, horse tail, bull tail, eggs, feathers from an eagle's tail, part of the body of two species of owl, a sparrowhawk, crow, the performer's own teeth, a little human being, and most commonly parts of a bear's body. When the people were short of tobacco, some would act as if pulling out their own teeth, but would produce some tobacco instead. An old man has been seen to produce sacred Tobacco. A man named Plenty-bear was in the habit of showing bear's teeth and caused the terrified spectators to retreat till finally some would burn incense over him. Big-snake said that while his wife did not show anything of this sort sometimes her abdomen would swell and blood would come gushing out of her mouth, which he seemed to consider an equivalent performance.

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[1] Curtis, IV, p. 178, f.

[2] Lowie, this series, vol. 25, 340-341.

Cut-ear had the reputation of being able to make flannel come out of his mouth and then rolling it back again. He promised to give me a private exhibition but failed to appear at the time stipulated. One of my interpreters used to believe in the miraculous power of these performers but lost faith when he detected one of them smuggling into his mouth the paint he was supposed to produce from inside his body.

The Bear Song dance was not the sole occasion on which *bằtsirə́pe* were exhibited. In several of the chapters of the Tobacco society such performances were in vogue. Awacɛ́c has been known to blow red paint from his mouth on a couple taking part in the Tobacco dance. Often the appearance of the *bằtsirə́pe* is due to the violation of a taboo: the owner has been told in his dream that he must not smell a certain thing or must not have a certain part of his body touched, and when such a rule is broken, the *bằtsirə́pe* comes out. Thus, some people fear the odor of burning horsehair for it would make them exhibit horsehair. The narrator who will be quoted below on the Bear Song dance received a captain's medicine from a man who was wont to throw up black mud and gave this power to my informant, telling him that he must not smell burning rawhide or other skins nor the blood of a menstruating woman lest the black mud come out of him. As a matter of fact, my informant blew out black mud three times when the odor of these forbidden objects reached him, but the fourth time blood came out instead, and thereafter he lost the power completely. The medicines of others were afraid of smoke and would pop out in the presence of smokers.

The *bằtsirə̀pe* was not always made to recede. An old woman, e.g., would exhibit pieces of shell used for ear ornaments and give them away. She was considered medicine; though she had no husband, she owned all the horses she wanted.

According to one informant, the people did not believe that a whole bear, horse, or buffalo had entered the person's body but only the part shown, also that in making, say, a horse tail reënter his body a performer would reduce it to a very small size.

The following was cited as analogous to the *bằtsirə́pe* phenomenon. Whenever Otter-chief eats a cherry, he goes into a trance and acts like a bear, but does not exhibit anything.

It is clear that the following experience narrated by Belden[1] is connected with the *bătsirǝ́pe* beliefs:—

> Several romping Crow girls being present at my quarters one day, one of them, for sport, commenced tickling another, who could not bear to have any one touch her under the arms. The poor girl screamed frantically, and rolled over and over, but the other kept on poking her in the ribs until she fainted outright. Basache then, in great alarm, raised her up and called to me to bring the scented grass quickly; for the girl's tail was coming up in her throat and choking her to death. I brought the grass, of which Basache kept a good supply on hand, and lighting some of it, one held the fainting girl over it while the other threw a shawl about her head. She soon revived and took her departure, when I asked Basache to explain to me what she meant by saying the girl's tail had come up in her throat. She said very gravely, "Every human being has a tail in his stomach, and it is this that always makes him sick. Some have fox tails, others cow tails, others again, tails of birds, and still others dog, mink, beaver, raccoon, and horse tails. The latter are very dangerous, and constantly liable to get out of order. No one can be sick while their tail is in order, but as soon as anything gets the matter with it then he is sick. If a man has a cold, it is his tail; if he has fever, vomit, rash, boils, and above all, pains in his stomach, there is something wrong with his tail.
>
> This theory was so absurd I could not help laughing, at which Basache was very angry, and left my presence, but I called her back to inquire what kind of a tail she had in her stomach, when, to my surprise, she promptly answered, "A wolf's tail, sir." I said, "Do each of you indeed know what kind of a tail is in your stomach?" "Oh yes," she replied, "everybody knows that, and there is my sister, Ba-ra-we-a pak-peis, who has a cow's tail, and Pen-ke-pah, whom you know very well, has a horse tail, which is constantly making her sick. When Ba-ra-we-a-pak-peis was younger, her tail troubled her a great deal, and mother says it often came up in her mouth, and sometimes protruded from her throat, but it never does so now, since the Indian doctor gave her some bitter herbs to swallow.
>
> All this was very curious and ridiculous to me, but, upon inquiry among the Crows, I learned it to be a well-founded superstition, and nearly every Crow believed a tail of one kind or another dwelt in his stomach, which was the sole cause of his ills, aches, and pains.

This quotation is interesting, though I am not able to corroborate the statement as to the generality of the belief described above.

To turn now to a consecutive account of the dance.

It is not clear who took the initiative in organizing a performance. A bear is killed and the hide is kept after being tanned. Since the bears in the mountains dance when the berries are ripe, the proper time for the ceremony is in the fall. Then the people set up a cottonwood post and tie the bearskin with the claws on it to this stick. A considerable amount of pemmican or meat-balls with lard is brought to the site. The people form a well-sized circle round the post and the singers sit in the rear. The dancers assemble in a special tipi, dress up, and in single file proceed to the skin. Usually an old woman took the lead and the men brought up the rear. They came and danced towards the skin, then backward from it. The musicians sang a certain song, the Bear song, and if people had a *bā̀tsirə́pe* they simply could not help themselves, but were irresistibly drawn towards the pole. Cuts-the-picketed-mule gave the following as the song that would make the *bā̀tsirə́pe* come out:—

---

[1] Belden, G. P., *Belden, the White Chief* (Cincinnati, 1875), 423 f.

bik˙ā́tacè	ík˙akawè!	naxpitsɛ́	rākā́te	kara-kʽṓrək,
Lodge Grass creek (obj.)	look at!	The bear	cub	is there,
akcɛ́	hirḗrək.ʽ			
its parent	is here.			

Another informant spoke of four songs and said that much time was consumed with them.

On a particular occasion a man approached the bearskin with a robe over his head and rubbed his face against the bearskin. He blew out red paint from his mouth, stood back from the skin, and then the performers saw bear teeth protruding from his mouth. My informant had heard it said that this man in fasting had dragged a bearskin fastened to his back. Several men threw blankets over him, threw him on the ground and held him. They burned *isɛ́* incense, smoked him with it, covering him with a blanket, and gave him a big lump of pemmican, whereupon he departed. Next came a woman, who did not rub her face against the skin but displayed a buffalo tail with a plume on it and also made white clay come out of her mouth. She was not so wild as the male performers; some women seized her, made her sit down and gave her the same kind of incense to smell; whereupon the tail receded into her mouth and she went off. Another old woman rubbed her face against the bear, exhibited the feathered end of a stick and said it was a coup stick. She was restored with sweetgrass incense. Then came the woman again who had shown the buffalo tail, but this time she showed the tail of a gray horse. Another performer struck his side and blew out three bird's eggs. They took the eggs and looked at them, and they were real. Incense of sweetgrass was made; the performer smoked the eggs with it, then put them back into his mouth and swallowed them. He received three pieces of pemmican.

It happened that more than ten persons performed in this fashion. Sometimes only the dancers exhibited objects, sometimes only the spectators.

Another informant stated that the *bā̀tsirə́pe* does not always come out at the first trial. In case of failure, the performer retreats and makes a second attempt. According to the same authority only the old women danced and they put dark brown paint on the hair and cheeks in imitation of a bear.

The Indians believe that the bears danced on the other side of the Rosebud. There is a pine there toward which they are supposed to have danced. The ground around it is smooth and bare, and different kinds of paint with the marks of claws were seen on the tree, also the bear's footprints nearby.

TEXT

naxpitsɛ́	icū́	risū́	awákak.	batsɛ́m	kʻōn	díək,	Ē̄etkuc
A Bear	Song	dance	I saw.	A man	it	did,	All-together

kʻōn	díəkʻ.	naxpitsɛ́m	barē′-kuc	daxdə́k	pátukʻ.
it	did.	A bear (skin)	a stick to it	they tied and	stuck it in.

kàrakʻṓn	baráxukʻ.	ak-daxpitsɛ́-kuc-dicɛ́	dū′o	disə́k,
Then	they sang.	Those who towards danced near	came	dancing,

dū′o	cukpā′	kuc	disə́kʻ.	kʻūwī′ um,
they came	four times	towards it	dancing.	When they had done,

pī′ctsisa	kàr-ak-bā′-aci′ə	kan-dū′okʻ.	dū′ra,	ī′isə
next	then those who something exhibited	came.	They came,	their face

naxpitsɛ́əc	áxaxək.	kʻōím,	bâ̄-acíək.
against the bear (skin)	they rubbed.	When through,	they showed something.

karąkʻṓwim,	íəxce	kʻū′okʻ.	nā′kʻa+ukʻ.
When this was over,	pemmican	they gave them.	They went home.

ak-bâ̄-acíə	ī+ahùkʻ.	basɛ́	naxpitsɛ́-rək
Those who showed	of them were many.	The ancient people	bears and

bapúxtə-rək	tsɛ́t-rək	bicɛ́-rək	birə́pə-rək	pō′paʻtə-rək
otters and	wolves and	buffalo and	beavers and	owls and

karamā′acī+o	kʻōkʻ.
showed	that is it.

Small-rump said that at these performances female members of the Tobacco society dance. Whatever pemmican was left after the ceremony was divided among the dancers and singers. Once a performer showed a scalp, and blood was seen issuing from his mouth. Another went to the center of the ground, rubbed his gun against his abdomen and bade the people spread a blanket. Then bullets fell on it from his mouth. Still another, after rubbing his face against the bearskin, produced red, blue, and yellow ribbons out of his mouth, and two little white men were seen standing on his lips. Those who showed such things acted as though drunk.

MINOR DANCES

Two dances were mentioned by some informants as performed by the Hidatsa and in some measure by the Crow, meaning, I presume, mainly the River band. Neither had any ceremonial significance. The information obtained about them follows.

Sharp-horn knew of a Chaste Women's dance (*bīə bā́wurōk disúə*) and Crazy (*i.e.*, Unchaste) Women's dance (*bī́ə warā́x disúə*). The former united all the women, married and single, who had never had illicit love affairs. They had a man sing for them. It seems fairly clear that this performance must be connected with the Oglala festival in which only pure women were permitted to participate, all pretenders exposing themselves to public ignominy.[1]

The Crazy Women were "like prostitutes." When performing their dance, they would unite two tipis into a large lodge and summoned the people to come. Married men were not barred, but for the most part only bachelors accepted the invitation. One woman, who acted as leader, carried a six-foot pole with sleighbells and struck the ground with it. The men danced, hugging the girls. They went round till the leader stepped in front of all, jingling her bells. Two couples were then taken into the center and danced facing each other, then the partners kissed each other, the man giving his girl a horse or some other form of property held by women. There was feasting also. The kissers were as though engaged and sometimes married subsequently, a statement hardly tallying with the above-cited characterization of the female participants. An eminent chief was said to have acquired his present wife in this fashion. Possibly this custom is connected with the Oglala Night dance which is also conceived as a courting ceremony and where presents are given to young women. The Cheyenne are credited with transmitting the dance to the Oglala.[2]

It is probable that this dance is identical with the Goose Egg dance (*bī́ra i˙g˙e′ disùə*), under which appellation Bull-weasel's mother gave a detailed account of a courting and kissing dance. Her narrative follows.

> I was a young girl when one winter all of us River Crow moved to the Hidatsa camp below the junction of the Yellowstone and Missouri. There were earth-lodges there. The Hidatsa had plenty of corn; they would load their horses with it and bring it to any Crow Indians with whom they wished to make friends. We stayed there until spring.
>
> The Hidatsa once came to our camp to dance. All the good-looking women, married and single, came two abreast, led by two chaste girls, and in the rear came

---

[1] This series, vol. 11, 76 f.
[2] This series, vol. 11, 78 f.

six male singers. They walked through the camp and stopped in the center. There the women formed a circle, the men getting within. The performance resembled the Owl dance except that only women took an active part. Each wore a headband of blue flannel about one inch wide, to which were tied two eagle-tail feathers with their quills facing each other. The dancers had red paint round the eyes and wore red flannel blankets, which they held tightly below the neck. A herald followed the musicians. When he got to the center, he cried out, "Young men, give presents to those young women whom you like and kiss them. If your heart is greater so that you want to marry them, give them a horse and none will run away." Fearing a rebuff, the Crow men were at first bashful and merely stood about watching for a while. At last one Crow dressed himself up with a nice breechcloth and got into the center. He eyed all the Hidatsa women, who were tall and slender, and selected the most beautiful one. He put a beaded blanket round her, put his arm round her body, and kissed her. This was the beginning. All the other Crow men went home hurriedly to dress up, returned, gave the girls kisses, and then walked off. One Crow picked out a pretty woman who had been deserted by her husband and offered her a stick, saying it represented a bay horse. All the Hidatsa were looking on, and the young woman's mother took the stick. Another Crow gave a stick symbolizing a white horse to a girl whom the Hidatsa men themselves had vainly tried to marry. This man already had a wife, who howled and cried as he did this, and went home crying. After the dance the Hidatsa singers spoke thus to the River Crow: "This dance we have given to you. Take it home and try it. Because you have given us several horses, you may have the chance." The River Crow brought the Hidatsa girls home with him.

We waited till the snow was completely off the ground, then we moved back. On the way we stopped. There were plenty of buffalo there and a herald announced that while we were waiting we should practise the dance so that on meeting the Many Lodges band we could show it to them. We called all the women into a large tipi, having picked out good male singers who had learned the songs from the Hidatsa. He exactly imitated the dress and paint of the Hidatsa; the feathers had been previously arranged. Our five drummers were waiting for us. We had a trial dance first. We tried the step but several did not know how to dance, some moving forward instead of sideways. The rest of us made fun of these. Finally we went through camp like the Hidatsa dancers, both single and married women. Two of us were large girls, and I was one of them. They announced that we were virgins and should take the lead. We were to stand by ourselves. The herald, who followed the drummers in the procession, then selected other pairs, making those of one height walk beside each other. I know the songs and sometimes I sing them and they bring back memories of the past that make me feel sad. We went through camp and formed a circle in the center with the singers within. Our dancing was not perfect yet. The herald stepped forth and said, "What are you waiting for, young men? You saw what the Hidatsa did. Give presents to the girls you like and kiss them." The young men brought in presents in compensation for the kisses. I was not kissed.

Subsequently the River Crow met the Many Lodges on the Bighorn, and they all camped together. There were plenty of lodges there. When they had camped, the herald cried, "Get ready, let us show the Many Lodges our new dance and surprise them." We were all eager to do it. We knew there were many good-looking men among the Many Lodges. We prepared our headbands with much more beadwork than the Hidatsa women had done and went to a preparatory lodge. Having no mirrors then, we painted one another's faces, with a red strip round the eyes in the Hidatsa fashion. We soaked white clay, put in sticks and made white dots round the red paint, as the Hidatsa had also done. We were all dressed exactly alike. My former mate and I were again chosen for leaders. Afterwards we formed a circle. The herald cried: "Come, young men, kiss the one you like best in return for presents, and if you want to marry her, give her a horse and take her away." There was a big ring of spectators. We did the same thing as seen among the Hidatsa. I was standing there. Long-horse was famed for his beauty among the Many Lodges. He wanted to kiss a virgin and asked the young men whether there was any such there. My future husband pointed me out to him. Long-horse came toward me. He was wearing a fine blanket. I thought more of the blanket than of the kiss. He took a long kiss, then walked off, leaving the blanket, which my mother appropriated. This happened not during a dance, but immediately after the close of one dance. A Dakota, who was present threw an ugly blanket over me, but I pushed it off. He did not seem to understand the hint, for he threw his arms round me. I pushed him off, and everybody laughed. He came on in spite of that, but finally let me go. The herald rebuked me: "He is not going to marry you, he only wants to kiss you." I did not like him. We danced a little, then we stopped. A man came with a mirror case. My mate was not approached by any man, so at last her mother took her away. One man gave a girl a stick, another pointed one at me but I refused it. This time the people upheld me. The young men of the Many Lodges kissed all the women. Two of the River band women got married.

After this we often performed this dance. I think after learning it from us the Many Lodges also danced it.

Gray-bull saw the dance only twice. He was a boy then. The boys jeered the men and women when they kissed each other publicly. Beadwork, looking-glasses, and scabbards were given to the women kissed. All the Many Lodges were surprised at the new dance. The women held powder-bags and otterskin quivers in their hands.

Strikes-both-ways, the oldest woman on the Reservation, briefly described three other dances.

The Not-small Old Woman dance (*kắr-i˙ə-sa-disùə; kắr*, old woman; *íə*, small; *sa*, not; *disùə*, dance) was pledged by a man before he set out on the warpath. He would say, "If I come back after having had good luck, I'll have this dance performed." The participants formed a big circle, danced, and received gifts from the relatives of the pledger, who also paid the musicians.

In the Greasy Grass dance (*bik˙á-tace disùə: bik˙á*, grass; *táce*, greasy) the women dressed up in masculine style and carried guns. Any woman was permitted to participate. They danced with a one-sided movement of the body. If a young man was in love with a girl, he would give her presents for a kiss. The season for this dance was in the spring and fall.

The Badger dance (*awatsī́risùə*) was performed in my informant's youth. When a war party returned after killing an enemy, the old women would rally the girls, including some who had not yet reached maturity, and made them dance with a gliding step. One woman was the leader. At the order "Take partners," the girls would go in search of young men, seize them and not release them till they threatened to kiss their captors. An old woman (the leader?) danced in front of the tipi, looked in, took up a gun and said, "I hope the one who gives this gun away will capture an enemy's gun." She held a scalp in her hand and carried a stick painted black. She sang a song of rejoicing in honor of the captain of the war party.

Each of the three aforementioned performances suggests some feature in the ceremonial organization of the Village tribes. The Hidatsa had an Old Women society that danced in honor of a successful warrior and received valuable presents from the hero eulogized.[1] The name of the Greasy Grass dance recalls the Mandan Hay society reported by Maximilian; the use of masculine garb by the female performers identifies it with the Cheyenne Women society of the Mandan. Since the native name was also translated "Sioux Women society", a relationship is further suggested with the Hidatsa Enemy Women, who at all events wore their hair in masculine style and carried poles like those of the men's organizations. A dance by women wearing men's clothing was recorded by Bradbury among the Hidatsa and by Brackenridge among the Arikara.[2] In the Badger dance the emphasis on the youth of the dancers recalls both Skunk women and the Gun Society.[3] The former danced after the killing of an enemy, in the latter guns figured prominently.

While the accounts are extremely meager, I cannot escape the impression that these minor Crow dances are for the most part much attenuated equivalents of performances witnessed by the Crow during visits to the Village tribes and occasionally attempted by themselves. On the other hand, influences from other directions cannot be excluded. The kissing feature of the Greasy Grass dance and Crazy Women's (=Goose Egg?) dance occurs among the Blackfoot, who derive their Kissing dance from the Assiniboin but sometimes name it for the Cree. The Dragging-feet dance of the Oglala, said to have been recently borrowed from the Gros Ventre, has been cited as a possible equivalent of the Blackfoot performance; and the Coyote dance of the Wahpeton, which an informant identified with the Night-dance, has obvious similarities with the Greasy Grass and Crazy Women's performance.[1] The Greasy Grass dancers' custom of donning men's apparel or carrying masculine regalia has its counterpart in the practice of the Oglala Shield-bearers as well as among the three Village tribes of the upper Missouri.[2] Finally, the Kiowa, like the Hidatsa, had an Old Women's society that performed in honor of a warrior who had conditionally pledged a feast.[3]

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[1] This series, vol. 11, 339.

[2] *Ibid.*, 323, 345, 326, seq.; Bradbury, John, Travels in the Interior of America, in the Years 1809, 1810, and 1811 (Liverpool and London, 1817), 146; Brackenridge, H. M., Journal of a Voyage up the River Missouri: performed in 1811 (Baltimore, 1816), 191.

[3] This series, vol. 11, 325, 340.

In connection with the data cited above Strikes-both-ways gave me the words of a song sung by young boys and girls in expectation of a gift of meat at the time when the women were preparing pemmican:—

isa‘ké	ḕ-wa-kú-i-cō‘,
His mother	looked as though she were going to give me food,

mitác	waxawúə-ritsì‘kāt.	ítsik.	isáhak,
	it rattled.	It was nice	while going on,

k'owā́he.
now it is all over (an expression of disappointment).

At the Fourth of July festivities in 1910 ten men walking abreast enacted a scene of the old martial days. Nearly all of them had their faces blackened with charcoal[4] and thus they paraded through camp, followed by a mounted herald, carrying a medicine bundle on his back. The herald subsequently dismounted and followed afoot. This performance was probably the climax of a dramatic representation of an old-time war raid against the Dakota, which I learned had been given in the early hours of the day.

In the afternoon of the same day a small circle of men, for the most part richly dressed in old-fashioned costume, gathered. There were also a few women present. One of the men was holding a hooked spear wrapped with otterskin, with which he executed various movements. Blankets and clothes were piled up within the circle and were given away.

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[1] *Ibid.*, 78, 129, 459.
[2] *Ibid.*, 75 f.
[3] *Ibid.*, 849.
[4] Lowie, this series, vol. 9, 235.

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ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

VOLUME XXII

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AMERICAN MUSEUM PRESS
NEW YORK
1924

Editor

Clark Wissler

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ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

VOL. XXII, PART I

CONTRIBUTIONS TO THE ARCHAEOLOGY OF MAMMOTH CAVE AND VICINITY, KENTUCKY

BY

N. C. NELSON

NEW YORK
PUBLISHED BY ORDER OF THE TRUSTEES
1917

CONTRIBUTIONS TO THE ARCHAEOLOGY OF MAMMOTH CAVE AND VICINITY, KENTUCKY.

By N. C. Nelson.

PREFACE.

Cave archaeology has many incentives in America. In the first place, this line of research has yielded unprecedented results in Europe and some of the Old World investigators still persist in arguing that application on our part would duplicate their own achievements. In the second place, we possess an abundance of caverns and rock-shelters scattered over widely differing sections of our continent and there is sufficient evidence also that the aborigines have commonly made use of them. In the third place, caverns furnish exceptional conditions for the preservation of artifacts of all kinds. Consequently, one is strongly inclined to the opinion that here, if anywhere, we may hope to find solutions for some of our archaeological puzzles — the use, for example, of such problematic objects as banner stones, bird-stones, etc. Not only that but cave investigation may reasonably be expected to yield many perishable artifacts that would serve to verify and supplement our present notion, especially of the aboriginal cultures of the eastern United States. In the fourth and last place, the caves appear to hold the key to the archaeological problem — i. e., the chronology — for several large and important continental areas. The reason for this is that nowhere else can we be quite so sure of the validity of stratigraphic results as in cave-floor deposits. Shell-heaps may be almost equally satisfactory for certain coastal regions — and it may not be untimely to remark that shell-heaps have not yet been adequately investigated. The ordinary earthmound, however, or the ordinary village site, while it may furnish clues regarding the time sequence of particular traits of culture, does not appear to be suitable for speedy and precise results. Likewise our finds in drift deposits as, for instance, in the Delaware and Ohio valleys — so promising and yet so baffling; if the effort devoted to these had been expended on caves and rock-shelters we should doubtless long ago have had cleared up the issue involved.

Most of these incentives have been apparent for a long time. There can be no doubt, for example, that the remarkable European discoveries directly prompted cave investigations in this country by such men as Professors F. W. Putnam, J. C. Merriam, Charles Peabody, W. K. Moorehead, W. C. Mills, and others. At present a really considerable amount of cave work has been done in America, extending from one extreme of the continent to the other and ranging over a period of time dating back at least to 1835. Various centers such as Patagonia, Brazil, Yucatan, our own Southwest, Kentucky with adjacent states, California, and even

Alaska have been tried out more or less thoroughly, but with what have hitherto been regarded as essentially negative results. It might be profitable in this place to consider at length the history of American cave archaeology and to cite a bibliography; but time forbids. Men and institutions, one after another, appear to have taken up the work with enthusiasm and after a few years to have given it up again. The difficulty, it seems to the writer, has been that they have all expected too much. But while our work has been sporadic it has not been altogether superficial nor without value. We have learned enough perhaps to warn us against the sanguine expectations of our European colleagues and, whether or not this may account for the apparent neglect of the field, some of us are still convinced that cave work should be continued.

It was thoughts such as these that prompted the American Museum to make a preliminary examination of some of the Kentucky caverns last summer. The Mammoth Cave happened to be one of the sites chiefly because the cave management some four or five years ago made us a generous gift of archaeological material, including several choice textile specimens, found in the Mammoth and Salts caves on their estate. Our desire was to learn something of the conditions under which such perishable objects occurred, whether there might not be more, etc. There was no real expectation of finding any essentially new data here because the cave had been frequented for more than a century and in fact had been studied by no less an authority than the late Professor F. W. Putnam himself. Indeed, it is probably not far from the truth to say that it was here that Professor Putnam received the inspiration which turned him from natural to anthropological science — making him the sponsor for archaeological research all over the American continent.

The Kentucky region was deliberately chosen. For one thing it lies south of the limits of glaciation. If the Indian was in fact present on the American continent during the ice age he might as easily have inhabited Kentucky and Tennessee as his contemporaries of the Old World did the borders of the Pyrenean uplift. Geologically and topographically the two regions are in many respects similar. In both cases we have limestone formations deeply eroded and consequently abounding in caverns and rock-shelters of great age. Moreover, this very limestone was the repository of raw material of which people everywhere during the stone age stood in great need, viz., flint. But aside from this attraction the country as a whole in point of natural food resources seems to have been well suited to a primitive non-agricultural mode of life. It was well stocked with fish and game, to say nothing of vegetal products such as nuts, berries, and roots. The primeval forest of the eastern section of the state may have been heavier than in the lower Pyrenean country; still, from all reports, it was less impenetrable than the half-despoiled timber lands of today. At any rate, the problem of getting about was not so difficult as might be imagined. The same geologic forces that provided caves and shelters to accommodate the primitive pioneers had also blazed avenues of communication for them, because no equivalent section in the world is better served by navigable waterways than is the commonwealth of Kentucky. Besides, the buffalo began to roam the state in late prehistoric times, his deeply worn trails connecting river-fords, salt-licks, springs, and open grasslands, following usually the easiest grade or, in other words, the lines of least resistance, thus giving rise no doubt to some of the local modern highways. Under these circumstances one may readily believe that whatever the date of arrival of aboriginal man in these parts and whatever events transpired during his occupancy, the main facts are preserved for us, at least in part, in the cave deposits.

In securing the data to be considered I am under obligation first of all to Judge Albert C. Janin of Washington, D. C., who as trustee of the Mammoth Cave Estate not only presented some of the material directly, but also encouraged my own excavations. I am likewise indebted for helpful assistance to Manager H. M. Pinson and to Miss Helen Randolph. In working up the material I have to acknowledge assistance on several points. Thus the shell species have been identified jointly by Curator L. P. Gratacap of the Museum staff and by Dr. Bryant Walker of Detroit. The animal bones were identified by Mr. H. E. Anthony and Miss Mary C. Dickerson, also of the Museum staff. The text figures were drawn by Mr. W. Baake and the plan by Mr. S. Ichikawa. Lastly I am indebted to my wife for assistance in preparation of the manuscript.

N. C. Nelson.

August, 1917.

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INTRODUCTION.

Most of the original data embodied in the following report were collected by the writer in May and November, 1916. The additional items were abstracted from a series of miscellaneous cave specimens presented to the American Museum in 1913 by the Mammoth Cave Estate. The latter collection comprises catalogue numbers 20.0–5763–5778, the former numbers 20.1–136–216 and 99–7326–7331.

A preliminary visit was made to Kentucky in the month of May. At that time the writer held consultation with Professor Arthur M. Miller of the State University at Lexington regarding suitable localities for investigation. Professor Miller suggested among other places the Kentucky River, or that section of it to the south of Lexington lying between Valley View and Highbridge. He took the trouble personally to accompany me to a small cave at the upper terminal, and I later went alone to verify conditions at the lower end. This stretch of the Kentucky, like the middle courses of the other rivers of the state, is cut deeply into a limestone formation underlying the gently sloping tableland. The gorge at Highbridge is a little over three hundred feet deep and the towering palisades on either side of the river have been so far eroded as to afford numerous ledges and overhangs. A number of caves are also present, some of them, according to reports, showing indubitable evidence of Indian occupation. Village sites are likewise reported along the river, both on the plateau proper and on the narrow strips of bottom land occasionally wedged in between the river channel and one of the gorge walls. In such a locality the problem of secure and comfortable shelter was easily solved. But whether the Indian occupied the region, in particular the natural shelters, for any great length of time can, of course, be determined only by excavation, and this I found no opportunity to undertake.

The second locality to be inspected and the one in which excavations were later commenced, was a short stretch of the Green River in the vicinity of Mammoth Cave in Edmonson County. Although nearly one hundred miles southwest of the Kentucky River segment described above, the general conditions are very similar excepting that caverns are here far more numerous. Green River is a stately current running through a deep winding gorge and locally peculiar in that it is fed almost entirely from underground sources — a fact intimately connected with the production of caverns. The border country is again a plateau, forested and somewhat undulating, but averaging about three hundred feet above the river level.

This plateau is characterized in the first place by occasional outstanding "knobs" and in the second place by numerous sink-hole basins.

The knobs are eminences of a pyramidal character, sometimes several hundred feet high and usually capped with sandstone, which register for us in a rough way the amount of erosion to which the country has been subjected. They are of special interest to the archaeologist chiefly because many of them are natural strongholds and as such were occupied by the Indians at least in relatively late times. As good local examples of these knobs there might be cited Indian Hill[1] and Somerset Hill, the former about twelve miles down the Green River and the latter about eighteen miles up the same stream from Mammoth Cave.

The sink-hole basins, on the other hand, are depressions in the plateau surface resulting from the collapse of cavern roofs beneath. These basins act the part of funnels in catching up all the rain waters which usually drain through a vent in the bottom of each one and finally reach the river by devious underground channels. The waters in passage dissolve and wear away the limestone, thus gradually weakening the formation until new collapses and consequent sink-holes are added. This process of subterranean erosion has been calculated to have been going on for one or two million years[2] until the whole formation from the top of the plateau to the river level has been literally honeycombed with caverns. The Mammoth Cave, for example, is said to exhibit no less than five levels of galleries, the lowest of which is near enough to the river level to be flooded by the back-waters of the spring rise and therefore still in process of formation, while the upper is little more than fifty feet below the plateau surface and in process of refilling.

Without professing to deal with the geology in a technical way, it must be obvious from the foregoing facts that the upper levels of these caverns are exceedingly old. They are in the majority of cases both dry and comfortable, with a constant temperature of about 54 degrees Fahrenheit; in short, peculiarly suitable for the accommodation of early man. Here he could find protection from the elements as well as from pursuing enemies; here he could store his provisions indefinitely and preserve the remains of his dead; and here, finally, he was able to secure, in workable condition, one of his greatest necessities, namely, flint. It should therefore be no cause for wonder that many of the caverns and rock-shelters in the vicinity of Mammoth Cave, including that cave itself, give visible evidence of having been frequented by the aborigines.

The specific localities investigated in the Green River country embrace caverns, rock-shelters and "flint sites," i. e., spots in the cultivated fields where worked and reject flints (strictly speaking, chert or hornstone), etc., occur in quantity. For the sake of brevity, as well as clearness, the principal stations and the nature of the archaeological material obtained from them are presented in tabular form as follows:—

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[1] Putnam, (e), Vol. III, 62; Moore, 439, 487.

[2] Shaler, 8.

No.	Name or Locality	Ashes	Shell refuse	Animal bones	Human bones	Chipped flints, etc.	Ground stone implements	Bone implements	Shell artifacts	Potsherds	Textiles, gourds, etc.
† 1	Mammoth Cave vestibule	*	*	*	*	*	*	*	*		
† 2	Mammoth Cave interior	*			(*)	*					*
† 3	Flint site in clearing above Mammoth Cave					*					
† 4	Flint site in valley bottom below Mammoth Cave					*					
† 5	Dixon's Cave, near Mammoth Cave										
† 6	Cave adjoining White Onyx Cave, near Mammoth Cave			(*)	(*)						
† 7	Moonshiners' Cave, ½ mile below Mammoth Cave landing										
† 8	Flint site on valley bottom opposite Moonshiners' Cave					*					
† 9	Bone Cave, ca. 5 miles below Mammoth Cave landing, right bank			*	(*)						
† 10	Rock-shelter, ca. 200 yards below Bone Cave, right bank	*		*	*	*				*	
11	Haunted Cave, ca. 6 miles below Mammoth Cave landing, right bank										
12	Cedar Sink, 5–6 miles southwest of Mammoth Cave					*					
† 13	Rock-shelters (2) on the Napa farm, ca. 2 miles above Mammoth Cave landing, right bank			*		*					
14	Flint site on the Napa farm, ca. 2 miles above Mammoth Cave landing, right bank					*					
15	Flint site in Eden Valley, south of Three Springs					*					
16	Flint site and rock-shelter near Preacher Brown's house					*					
17	Flint site around Curtis Cave entrance, Eden Valley, ca. 2 miles east of Mammoth Cave					*	(*)				
18	Flint sites above and below Bedquilt Cave					*					
† 19	Salts Cave entrance and vestibule	*	*	*	*	*					
20	Salts Cave interior	*									*
21	Flint site in field surrounding Salts Cave					*					
22	Lard Cave and field, 15 miles up river, near Rowletts				(*)	(*)					

† Sites tested by investigation.
(*) Reported finds.

All but the last-named situation are within a radius of six miles of the Mammoth Cave. Within this area many additional but mostly nameless places were indeed superficially examined with negative results, the sites listed above being merely such as were either tried out by excavation or on which positive data were obtained without prospecting. Yet the search was by no means exhaustive, as was made apparent during the last few days of my stay when reports began to come from various quarters about "Indian caves," etc., though evidently some of these were outside the six-mile limit.

As may be observed in the table, the majority of the real archaeological stations are characterized by the presence of flint artifacts and by little else. The three or four principal exceptions are numbers 1 and 2, 10 and 19. Of these the last-mentioned, viz., the Salts Cave, may properly be omitted from detailed discussion. Several days were in fact devoted to work in and around the entrance to this great cavern but no refuse deposits could be located which had not already been turned over by previous investigators. Consequently, there is nothing of importance to add to the published observations on this site and the present new developments in the local archaeological problem are based on data obtained at sites 1, 3, 8, 10, 17, and 21, in fact almost altogether on sites 1 and 10, i. e., the Mammoth Cave vestibule and the small rock-shelter near Bone Cave.

Before proceeding to the subject it seems necessary to call special attention to the fact that the archaeological material to be presented comes mainly from three different sources, namely: (1) the open fields around the cave entrances, (2) the cave entrances proper, and (3) the cave interiors. Unfortunately, these three groups of data are somewhat disparate phenomena; that is to say, our understanding of their connections, culturally and chronologically, is incomplete. The relation of the cave vestibule material to that of the cave interiors is reasonably clear; but there is no telling where the surface material from around the cave entrances belongs. In other words, the inner logic of our theme does not show where we should begin or where end. Any one of several possible mechanical arrangements is open to objections. Up to the present time nothing trenchant has been published except on data from the cave interiors and it would seem most natural perhaps to begin with that division of our subject already made partially familiar. The historical perspective of the local archaeological investigations is, however, deemed of secondary importance in a disquisition of this kind and it will therefore be ignored. The troublesome division of our subject, i. e., the data from the surface around the cave entrances, will be taken up first and disposed of very briefly by descriptions and comparisons. Next we shall pass in review all the published and newly gathered data from the interior of the caves and point out their close relation to the moundbuilder culture and their comparatively modern origin. And finally, we shall turn to a more intensive study of the new line of data discovered in the Mammoth Cave vestibule, which data seem to the writer to be indicative of an older and more primitive stage of culture than has yet been recorded in this section of the country.

SURFACE SITES, MAINLY AROUND CAVE ENTRANCES.

Among the "curiosities" offered for sale to the Mammoth Cave visitors in 1916 were several arrow points and similar objects of chert. Inquiry disclosed that the disposal of such things was once a fairly thriving business and that certain individuals of the neighborhood have scoured the surrounding country to keep up the supply. The places where the relics occurred were spoken of as *flint sites;* and subsequent visits to some of the nearest of these revealed them to be probably either village sites or workshops. Naturally, after being hunted over for two or three generations, these places yield very few of the well finished and easily recognizable types of artifacts; but the less specialized types, such as scrapers or the unfinished forms of chipped blades, are still quite common. The most productive sites discovered were numbers 3, 8, 17, and 21 of the table in the introduction (p. 11) and all the specimens presently to be described were obtained at one or the other of these four places.

General Description of Sites.

Mammoth Cave Field. Site number 3 denotes the wooded slope and the adjacent plateau directly above and east of the Mammoth Cave entrance. Owing perhaps to a partial reforestation of the locality since aboriginal days and possibly also to the more intensive searching on the part of relic hunters, comparatively little archaeological material was to be seen here. If the place was a village site, as would seem probable, there were no distinct indications of any kind to prove it either in the way of house sites, black camp dirt, broken pottery, or abraded stone objects. Only about sixty worked and unworked pieces of chert were brought away, but the fact that they occurred so close to the cave entrance seemed very suggestive.

Moonshiners' Cave Field. The locality given as number 8 (p. 11) is a small semicircular flat partly enclosed by the first bend of the Green River below Mammoth Cave Landing and situated directly opposite Moonshiners' Cave. There is, however, no apparent relation between the flint site and the cave other than that of juxtaposition, and the name has been applied merely as a convenient designation. The situation seems strongly suggestive of a village site but the field has been under cultivation for a long time and it may also have been flooded repeatedly so that no aboriginal traces except chert fragments remain. At the time of the visit the field was in grass and a workman and myself in the course of a half hour picked up only eighteen more or less distinctly worked specimens; but, according to common report, it was formerly a very rich site.

Curtis Cave Field. Site number 17 indicates the little-known Curtis Cave, located in the Eden Valley, roughly two miles east of Mammoth Cave. The entrance to the cave is situated in an open cultivated field close to the base of a low wooded hill and is choked up with alluvium so that it cannot be traversed without a good deal of preliminary excavation. The surrounding field for some two hundred yards in certain directions is liberally strewn with fractured chert and apparently nothing else. To be sure, reports were current that "pestles" and other things had been found here; but while in the course of an hour's search we picked up over one hundred pieces of worked chert we did not observe a single indication of abraded stone work. This site is also known as one formerly rich in fine chipped stone specimens and a large fairly exquisite but typical spear point, said to have come from the place, was seen in the possession of a neighboring farmer.

Salts Cave Field. The last surface site to be specifically mentioned is number 21 of the preceding table, viz., the field surrounding the entrance to Salts Cave. This archaeologically well-known underground den is located some three miles in a northeasterly direction from Mammoth Cave and in surroundings that might be characterized as gently rolling country. In the midst of an open field there is to be seen a clump of trees standing apparently on a low hillock. Going up the incline and stepping in among the trees one is unexpectedly confronted by a sink-hole measuring something over 100 by 150 feet on the horizontal and perhaps 50 or 60 feet in depth. The north slope of the bowl is particularly steep, being in fact partly broken by vertical rock exposures. From a gouged out seam in the rock, some 25 feet below the rim of the bowl, there issues a small stream of water which pours over the remainder of the escarpment below and falls directly into the small entrance to the cave. In all probability the stream produced the entrance, though that is a suggestion of no particular concern to us. The local conditions have been outlined merely to show that we have here in close proximity all the elemental necessities conducive to permanent settlement, such as wood, water, soil for cultivation, and even shelter, if desired. Accordingly, the evidences of aboriginal frequentation in and around the entrance to this great cavern are no cause for surprise.

As has already been stated, there are indications that the entrance to the cave was used for camping purposes[1]; although, in reality, only to a very slight extent. The reason for this was doubtless that the vestibule contained scarcely any level floor space and, what was more important, daylight could not reach even what little suitable camping space there was. Nevertheless, chert fragments were found both in the vestibule and on the slope of the sink-hole outside; though their frequency here was nothing compared to what was observed in the cultivated field surrounding the sink-hole. Repeated searches were made here and forty-two worked chert pieces out of over two hundred odd finds were brought away; but, as in the case of the preceding sites, nothing else was found to indicate that there had ever been a village in the vicinity.

Citations of similar additional archaeological stations might be given on hearsay but the above will suffice. Whatever these places are, whether village sites or workshops, the conviction was inescapable from the start that they bore some intimate relation to their respectively adjoining caves. That the chert was quarried in the caves, as now seems most probable, did not occur to the writer at the time. Instead it seemed that the Indian perhaps chose to build his village near some cave entrance so that in time of trouble he might have a place of safety. If not that, then, inasmuch as he could hardly have lived permanently in the cave interiors, he must have lived in the entrances. Was it not already shown that he had lived in the Salts Cave entrance, even if the evidence was incommensurate with the amount of chert scattered in the surrounding field? It was reasoning of this sort that later resulted in excavations in the Mammoth Cave vestibule.

CHERT ARTIFACTS DISCOVERED.

The investigation of the Green River surface sites having been both local and desultory it seems useless at this time to attempt detailed textual descriptions of all the items discovered. Several writers such as Carr, Fowke, Young, Moorehead, and others have already familiarized us with the general nature of Kentucky's chipped implements. A rough analysis of the recognizable forms, with some illustrations, is needed, however, for purposes of comparison with the chipped artifacts from the Mammoth Cave vestibule to be described later. In addition, there are three forms which appear to merit special attention because of marked resemblances they bear to certain well-recognized European palaeoliths.

Miscellaneous Forms. The miscellaneous surface collections, partially illustrated in Fig. 1, appear to include:—

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[1] Young, 305.

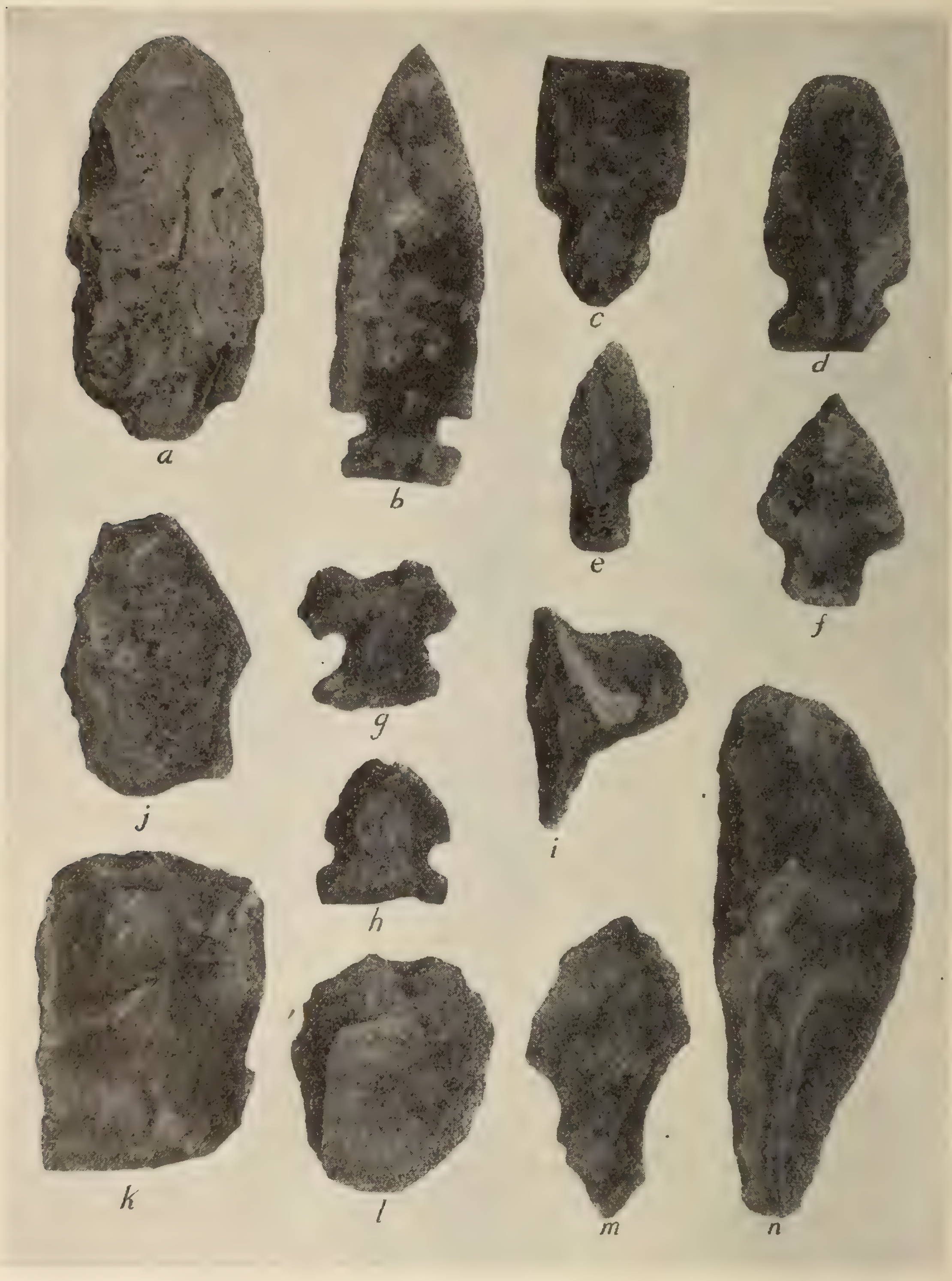

Fig. 1 *a* (20.1–212a), *b* (20.1–209a) *c* (20.1–212b), *d* (20.1–203a), *e* (20.1–209b), *f* (20.1–205), *g* (20.1–212c), *h* (20.1–203b), *i* (20.1–203c), *j* (20.1–212d), *k* (20.1–203d), *l* (20.1–213a), *m* (20.1–203e), *n* (20.1–209c). Chipped Implements from Surface Sites. $\frac{3}{5}$ Nat. size.

I. *Core Forms — Flaked and Chipped All Over*
  1. Unfinished Blades
    a Oblong (Fig. 1a)
    b Nearly disk-shaped
  2. Spear Points
    a Notched for attachment (Fig. 1b)
    b Stemmed for attachment (Fig. 1c)
  3. Arrow Points
    a Notched (?)
    b Stemmed (Figs. 1e, f)
  4. Knives or Scrapers (Fig. 1d)
  5. Scrapers
    a Notched edge (Fig. 1g)
    b Rounded edge (Fig. 1h)
  6. Perforators (Fig. 1i)
II. *Flake Forms — Chipped on Convex Side Only*
  1. Scrapers — more or less thick
    a Side-scraper (?), i. e., *racloir* (Fig. 1j)
    b End-scraper or planing tool (?), i. e., *grattoir* (Fig. 1k)
    c Notched scraper (Fig. 1m)
  2. Knives or thin scrapers
    a Oblong (Fig. 1n)
    b Disk-shaped (Fig. 1l)
    c Irregular forms

The "flake form" division of the preceding list contains several specimens which are suggestive of European palaeoliths, particularly those illustrated by Fig. 1k, l, n. Roughly speaking, they consist of concavo-convex flakes which have been retouched by chipping along the edge, the chipping having invariably been done from the concave side. Fig. 1k might pass for a Mousterian scraper and Fig. 1n is a blade of the sort that is very common in Aurignacian and later deposits. But with only a few specimens in hand it would be unprofitable to dwell at length on the suggested similarities.

End-Scrapers. A rather more interesting type of tool, of which several examples were found in the Curtis Cave Field, is shown in Fig. 2. The type is well known and has been figured and described before.[1] It appears to occur practically all over the Mississippi Basin, including western Texas, New Mexico, and Wyoming. Moorehead classifies the type as a "spoon-shaped" scraper and the labels in the National Museum identify it as a "duck-billed" scraper. The different ideas suggested by these terminologies correspond in a measure to an actual difference in form between the specimens from the eastern and western borders of the range of distribution. Those of the west, say from North Dakota or from the Staked Plain of Texas, are generally rather short and rounded or oval in outline, while those from the states east of the Mississippi are more often oblong, as in the case of the given illustration. Essentially, the particular specimens with which we are here concerned are more or less prismatic flakes, of somewhat triangular outline, the broader, thicker ends of which have been dressed by chipping to a very high or abrupt angle. Often the chipping has been carried along one of the sides, occasionally even both sides; but in some specimens it is confined entirely to the end. Evidently the end retouch was for purposes of utilization while the side retouch was probably for accommodation.

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[1] Fowke, 170; Moorehead, (c), 198–209.

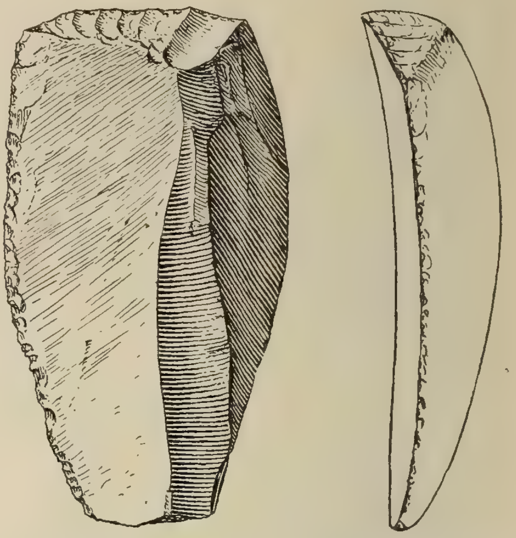

Fig. 2 (20.1–212e). Typical Chipped End-Scraper from Surface Site.

From the fact that this type of implement seems to belong to the Plains Area it has generally been regarded as a skin scraper; and the majority of the specimens being too short and stubby to be held effectively by the fingers it has been inferred that they were set in handles of wood or bone. Whether hafted specimens have ever been found I have not been able to ascertain, but in any case there seems to be no reason for promulgating a new theory about them. The western forms being little more than an inch in length they must undoubtedly have been hafted, but it seems quite possible for the specimen here illustrated to have been held directly in the hand, although it is only of medium length. Whether their use was entirely confined to skin-dressing may be questioned; some might conceivably have been used also for scraping wood or bone. The abrupt and somewhat dulled edge was no doubt deliberately devised for purposes of control. By this is meant that whereas a thin cutting edge might take too large a bite and thus ruin the object on which it is being used, a dull abrupt edge like the one here adopted could not do so. This difference is in a measure comparable to that existing between the spoke-shave and the plane.

But the point of chief interest about this tool is that in general form and in mode of production it is almost identical with the European *grattoir* of the middle and upper palaeolithic industries. The European type to be sure is usually longer and the retouched end is more often rounded than straight, as in the illustration. Besides, the French forms at least are made with superior skill and precision owing probably to the greater tractability of the raw material employed. Now, as is well known, the European archaeologists have long regarded their *grattoir* as a sort of primitive planing tool; and while this explanation need not be entirely discredited it would seem possible that we might in time convince them that some of these planing tools were skin-dressing implements.

Side-Scrapers. In addition to the roughly crescentic side-scraper illustrated by Fig. 1 j, two or three others were found in the Curtis Cave Field. The most interesting of these is shown in Fig. 3. It is an oblong, slightly curved flake of triangular cross-section. The one thin incurving edge has been slightly retouched on one side, presumably for scraping purposes, while the thick edge, or back, has been chipped it would seem for purposes of accommodating the hand. It is an implement which would delight Professor Rutot. But without going into further details, we may conclude simply by stating that this tool and the similar ones mentioned might very easily pass for Mousterian scrapers.

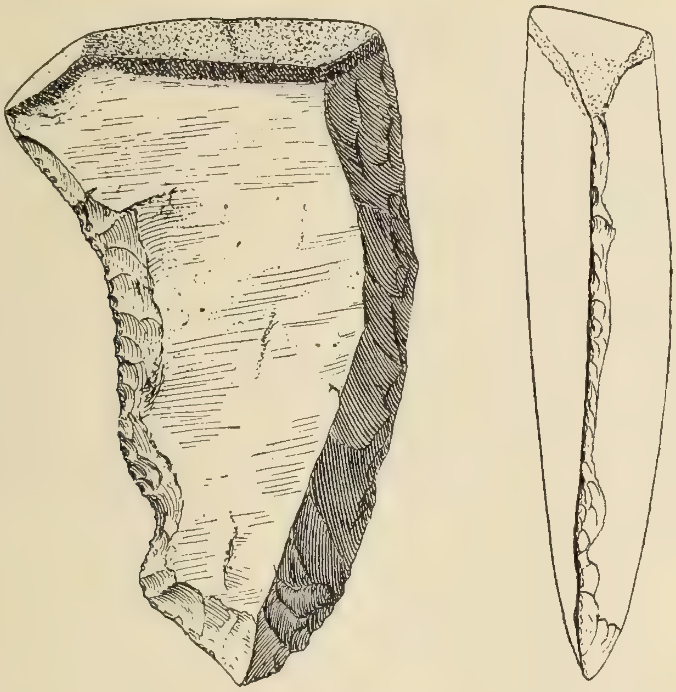

Fig. 3 (20.1–213b). Chipped Side-Scraper from Surface Site. Nat. size.

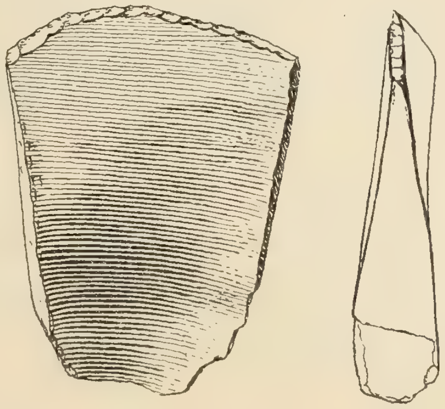

Fig. 4 (20.1–212f). Chipped Geometric Implement from Surface Site. Nat. size.

Geometric Form. The last specimen to be singled out from the surface collections is shown in Fig. 4. Unfortunately it is the only one of its kind available and perhaps apology is due for presenting it. I have no desire to classify it or even to describe it in detail.

Possibly it is nothing more than an odd form of the previously described end-scraper; but it looks very much like the geometric flints of late palaeolithic times. At least it is not a fragment of a larger tool: it was deliberately made into its present form.

CONCLUSIONS.

Perhaps before leaving the subject it may be well to state that there is no attempt to mislead anybody regarding the Green River flint industries. The liberties taken with terminology and the comparisons made with European palaeoliths have been resorted to only for purposes of precision. Our Kentucky specimens might be of historic date so far as evidence to the contrary is concerned; but their resemblance to palaeolithic forms is not fancied. It is my personal opinion that were a well-selected series of these specimens handed over in an unlabelled condition to an European archaeologist the chances are more than even that he would recognize them as palaeoliths and would proceed to distribute them over the whole range of that culture. But of course no sound inferences can be drawn from this fact regarding American chronology. For the present at least our specimens are merely proofs that in the elementary stages of tool-making the Indian and the palaeolithic man of Europe hit on the same processes, simply because they were the right processes.

As to the nature of the sites themselves at which the specimens were picked up, no positive conclusion can be reached. They may have been village sites in spite of the fact that no evidence exists to that effect; but, inasmuch as we shall show later on that the chert in question was probably quarried in the respectively adjacent caves, it seems at least reasonably certain that our surface sites are essentially workshops, if nothing more.

INTERIORS OF THE MAMMOTH AND NEIGHBORING CAVES.

The present investigation was not extended in any protracted or systematic way to the interior of the caverns in the Green River country, for the reason mainly that this line of work seemed already well in hand. To have accomplished anything further of prime importance would have required more time than was at my disposal. A hasty examination was made in the forward part of Salts Cave, but only a very few notes and collections were secured. In the Mammoth Cave, besides two or three preliminary visits, one entire day was devoted to a special examination of the main cave and a few of its secondary passages lying between the entrance and the dome known as Chief City. Some of the resulting data are new and worth recording, but before doing so it seems desirable to detail in a summary way the essential facts already placed on record by prior investigators.

Earliest Discoveries, 1810–1820.

The date of discovery and the history of early exploration, not only of the Mammoth Cave but of many other caverns in the vicinity, are shrouded in uncertainty.[1] As a natural result, there is some confusion regarding the origin of many of the archaeological specimens recorded in the early writings. The late Professor F. W. Putnam while a member of the Kentucky Geological Survey, from 1870 to 1875 or thereabouts, was probably the first to approach the subject in a scientific manner. He made explorations of his own in several of the caves in question and he also reviewed the origin and nature of the earlier finds, some of which date back to about the year 1810.

One find in particular, that of a richly furnished mummy, is of interest because it was minutely described as early as 1813, when it was exhibited in the Mammoth Cave. This description is quoted by Lewis Collins in his History of Kentucky,[2] from which the following relevant excerpts are taken: —

> On my first visit to Mammoth Cave in 1813, I saw a relic of ancient times, which requires a minute description. This description is from a memorandum made in

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[1] For the discovery of Mammoth Cave various dates ranging from 1797 to 1809 are given. See, e. g., Hovey, 15.

[2] Collins, Vol. II, 159–160.

the cave at the time. In the digging of the saltpetre earth in the short cave [supposed by some to be Gothic Avenue in the Mammoth Cave], a flat rock was met with by the workmen, a little below the surface of the earth, in the cave; this stone was raised and was about four feet wide and as many long; beneath it was a square excavation about three feet deep and as many in length and width. In this small nether subterranean chamber sat in solemn silence one of the human species, a female with her wardrobe and ornaments placed at her side. The body was in a state of perfect preservation, and sitting erect. The arms were folded up, and the hands were laid across the bosom; around the two wrists was wound a small cord, designed, probably, to keep them in the posture in which they were first placed; around the body and next thereto were wrapped two deerskins. These skins appeared to have been dressed in some mode different from what is now practised by any people of whom I have any knowledge. The hair of the skins were cut off very near the surface. The skins were ornamented with the imprints of vines and leaves, which were sketched with a substance perfectly white. Outside of these two skins was a large square sheet, which was either wove or knit. The fabric was inner bark of a tree which I judge from appearance to be that of the linn tree. In its texture and appearance it resembled the south sea island cloth or matting; this sheet enveloped the whole body or [and?] head. The hair on the head was cut off within an eighth of an inch of the skin, except near the neck, where it was an inch long. The color of the hair was a dark red; the teeth were white and perfect.... The features of this ancient member of the human family much resembled those of a tall, handsome American woman. The forehead was high, and the head well formed..... I discovered no blemish upon the body, except a wound between two ribs, near the backbone; and one of the eyes had also been injured. The finger and toe nails were perfect and quite long. The features were regular. I measured the length of one of the bones of the arm with a string, from the elbow to the wrist joint, and they equalled my own in length, viz., ten and a-half inches. From the examination of the whole frame, I judged the figure to be that of a very tall female, say five feet ten inches in height. The body, at the time it was discovered, weighed but fourteen pounds, and was perfectly dry; on exposure to the atmosphere, it gained in weight, by absorbing dampness, four pounds..... The color of the skin was dark, not black; the flesh was hard and dry upon the bones.

At the side of the body lay a pair of moccasins, a knapsack, and an indispensable, or reticule.... The moccasins were made of wove or knit bark, like the wrapper I have described. Around the top was a border to add strength, and perhaps as an ornament. These were of middling size, denoting feet of a small size. The shape of the moccasins differs but little from the deerskin moccasins worn by the northern Indians. The knapsack was of a wove or knit bark, with a deep strong border around the top, and was about the size of the knapsack used by soldiers. The workmanship of it was neat, and such as would do credit, as a fabric, to a manufacturer of the present day. The reticule was also made of knit or wove bark. The shape was much like a horseman's valise, opening its whole length on the top. On the side of the opening, and a few inches from it, were two rows of loops, one row on each side. Two cords were fastened to one end of the reticule at the top, which passed through the loop on one side, and then on the other, the whole length, by which it was laced up and secured. The edges of the top of the reticule were strengthened with deep fancy borders. The articles contained in the knapsack and reticule were quite numerous, and were as follows: one head-cap, made of wove or knit bark, without any border, and of the shape of the plainest night-cap; seven head-dresses, made of quills of large birds, and put together somewhat in the way that feather fans are made except that the pipes of the quills are not drawn to a point, but are spread out in straight lines with the top. This was done by perforating the pipe of the quill in two places, and running two cords through the holes, and then winding round the quills and the cord fine thread, to fasten each quill in the place designed for it. These cords extended some length beyond the quills on each side, so that on placing the feathers erect, the feathers could be tied together at the back of the head. This would enable the wearer to present a beautiful display of feathers standing erect, and extending a distance above the head, and entirely surrounding it. These were most splendid head-dresses, and would be a magnificent ornament to the head of a female at the present day. Several hundred strings of beads; these consisted of very hard, brown seeds, smaller than hemp seed, in each of which a small hole had been made, and through the whole a small three-corded thread, similar in appearance and texture to seine twine; these were tied up in bunches, as a merchant ties up coral beads when he exposes them for sale. The red hoofs of fawns, on a string supposed to be worn around the neck as a necklace. These hoofs were about twenty in number, and may have been emblematic of innocence. The claw of an eagle, with a hole in it, through which a cord was passed, so that it could be worn pendant from the neck. The jaw of a bear designed to be worn in the same manner as the eagle's claw, and supplied with a cord to suspend it around the neck. Two rattle-snake skins; one of these had fourteen rattles; these skins were mostly folded up. Some vegetable colors done up in leaves. A small bunch of deer sinews, resembling cat-gut in appearance. Several bunches of thread and twine, two and three threaded, some of which were nearly white. Several needles some of which were of horn and some of bone; they were smooth, and appeared to have been much used. These needles had each a knob or whorl at the top, and at the other end were brought to a point like a large sail needle. They had no eyelets to receive a thread. The top of one of these needles was handsomely scalloped. A hand-piece made of deer skin, with a hole through it for the thumb, and designed probably to protect the hand in the use of the needle, the same as thimbles are now used. Two whistles, about eight inches long, made of cane, with a joint about one-third the length; over the joint is an opening, extending to each side of the tube of the whistle; these openings were about three-quarters of an inch long, and an inch wide, and each had a flat reed placed in the opening. These whistles were tied together with a cord wound around them.

The author of the description, whose identity is uncertain,[1] has been held by some to ascribe the origin of his specimens to the Mammoth Cave. An uncritical reading of his text might perhaps yield such an interpretation, but in any case it is contradicted by at least two contemporary writers.[2] Professor Putnam probably discovered this for himself because in 1875 we find him referring the mummy to Short Cave,[3] some eight miles away, while

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[1] Collins, writing prior to 1847, in Vol. II, 159, refers to him as "a highly scientific gentleman of New York," while Professor Putnam, who quotes this same passage in full about 1875, (see *b*, 314) refers to it as probably written by one Mr. Merriam of Brooklyn.

[2] Farnham, 360; Wilkins, 361–363.

[3] Putnam, e. g., (c), 413; (d), 8.

Dr. Hovey in his Mammoth Cave guidebook (1912) credits the same find to Salts Cave.[1] The actual facts of the case do not appeal to me as of any great importance. The writings of the day make it perfectly evident that several desiccated bodies were found at about the same time (1810–20), some in the caverns and rock-shelters of Kentucky[2] and others in similar places in Tennessee;[3] and there is no inherent reason why one or more of these should not have come from the Mammoth Cave, especially as both Collins and Hovey state that skeletal material was uncovered here, presumably by the saltpetre workers, in the front part of the cavern.[4] The Salts Cave finds alone seem to be entirely authentic, perhaps because of relatively late date, and Mr. H. C. Ganter of Glasgow Junction still possesses a mummy said to have been found here. A number of mummy discoveries evidently belonging to one and the same culture level being thus confused, I can do no better in this place than to list the objects found with them, regardless of the cave from which they may have been derived. The important items are as follows: —

1. Cords, two, three and five stranded.
2. Fishing nets, fragments of.
3. Matting.
4. Baskets, fragments of.
5. Basket-coffins made of cane.
6. Cloth, two different kinds, woven or knitted of bark.
7. Bags, different sizes, woven or knitted of bark.
8. Moccasins, different sizes, woven or knitted of bark or flags.
9. Head-cap, woven or knitted of bark.
10. Belts.
11. Dressed deerskins, ornamented with imprints of vines and leaves.
12. Dressed deerskins with hair shaved off.
13. Headdresses of feathers.
14. Mantle covered with feathers — apparently attached shingle-roof fashion.
15. Blanket woven of feathers — same principle as the feather blankets from the Cliff Dwellings of the Southwest.
16. Fan of turkey tail-feathers.
17. Strings of beads made of perforated seeds.
18. Indian beads, two — presumably of stone but not found with mummy.
19. Necklace of fawn hoofs.
20. Pendant of eagle claw with suspension cord.
21. Pendant of bear jaw with suspension cord.
22. Needles, or awls, of bone and antler.
23. Whistles of cane reeds.
24. Wooden bowl, ½ pint capacity — not found with mummy.

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[1] Hovey, 33.

[2] Mitchill, 319.

[3] Jones, 1–6.

[4] Collins, II, 158; Hovey, 34.

25. Bows and arrows.
26. Poles cut with flint stones.
27. Rattlesnake skins.
28. Vegetable colors done up in leaves.
29. Deer sinews — and other minor objects.
30. Pottery vessels and fragments [1].

This diversified list of cultural data speaks for itself and it is necessary merely in this place to point out to the reader two important facts concerning it. The first is that all but two or three of the above items were the accompaniments of so-called mummies; and the second is that while it is impossible now to find out how these mummies were disposed of in the caves, some at least were secreted in stone graves [2] of the identical type commonly met with in the aboriginal cemeteries of both Kentucky and Tennessee and beyond.

KENTUCKY GEOLOGICAL SURVEY DISCOVERIES, 1870–1875.

The comprehensive State Surveys of Kentucky, begun about 1870 under the direction of Professor N. S. Shaler, resulted in a new body of archaeological data being gathered from the Green River caves. On the scientific staff was the late Professor F. W. Putnam, serving in the capacity of naturalist. His work, as it happened, included a study of the cave fauna and while collecting this material his attention was forcibly drawn to the evidence of aboriginal visitation in the caves. Precisely what and how much of strictly archaeological work Professor Putnam really did is not quite clear; but Shaler, in his preface to the first memoir of the survey, especially announces a monograph by Putnam entitled: "On the Cavern Dwelling Races of Kentucky," with six plates. This paper unfortunately was not issued, and Putnam's discoveries are set forth only in a limited way in the Peabody Museum reports and in several of the scientific periodicals of the day, already cited. In these abstracts it appears that Putnam collected most of his archaeological data in the Salts Cave, although he evidently also visited the Mammoth Cave and found similar if not as many specimens in that place. The list of specimens extracted from Professor Putnam's writing[1] includes:—

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[1] The above items are abstracted mostly from notes and letters written under dates ranging from about 1813 to 1820, i. e., shortly after the discovery of several mummies in the Green River country. See bibliography under:

Fiske, 303–304; Mitchill, 319–320, 321–323, 329–330; Putnam, (b), 323–328; Wilkins, 362–363; see also Collins and Jones.

The history of the collection is partly known. Prior to 1815 most of it fell into the hands of the American Antiquarian Society, Worcester, Massachusetts, where it remained in 1875 when Professor Putnam reviewed it. Since then the mummy and probably all of its accompaniments are said to have been turned over to the National Museum, Washington, D. C., where some of the material appears to be on exhibit, as I have recently seen fragments corresponding to items 8, 13, 17 and also item 24, i. e., the wooden bowl. This last is possibly the hitherto mythical specimen which gave rise to the name Wooden Bowl Room for one of the chambers in the Mammoth Cave. The National Museum acquired a collection of textiles said to have been found (about 1877) with a mummy in a cave eight miles from Mammoth Cave and which has been described and partly figured. See Holmes, (b), 34.

[2] Wilkins, 362; Mitchill, 318; Putnam, (e), I, 5: 21.

1. Bundles of raw textile materials.
2. Cords, different sizes.
3. Tassel or fringe of neatly braided fiber.
4. Cloth, finely woven, dyed black stripes, darned.
5. Moccasins of different sizes and materials.
6. Feathers, of turkey?
7. Reed torches tied with strips of bark.
8. Burnt sticks showing choppings of stone ax.
9. Gourds, fragments of large.
10. Wooden platter, fragment of a.
11. Pendant of perforated *unio* shell.
12. Arrow point of flint.
13. Fresh-water shells.
14. Animal bones.
15. Human excrement.
16. Skeletal remains, a considerable amount of.
17. Fireplaces and faggot stations.
18. Imprints of sandalled feet.[2]

As Professor Putnam has himself observed,[3] his list of data corresponds in many points with those associated with the mummies and it is hardly to be questioned that the two series of artifacts belong to one and the same type of culture. In other words, we seem warranted in concluding that the people who buried their dead in the caves were the same who left their effects scattered about on the cavern floors.

RECENT DISCOVERIES.

The archaeological cave investigations begun by the Kentucky State Survey came to an abrupt end apparently about 1875 and since then nothing seems to have been done until a few years ago when Colonel Bennett H. Young of Louisville took a hand. As a man of wide interests and broad sympathies Colonel Young for many years has been an enthusiastic collector of things relating to the prehistory of his state. His lectures on archaeological subjects have excited much interest in his own section of the country and in 1910, at the invitation of the Filson Club of his city, he prepared a sumptuous volume on the "Prehistoric Men of Kentucky," cited in the bibliography. The author expressly disclaims all effort at scientific presentation; nevertheless, the volume, in addition to its fine illustrations of rare and valuable specimens, sets forth not a few facts of importance.

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[1] Putnam, (b), (c), (d).

[2] This series of specimens is still extant at the Peabody Museum, Cambridge, Massachusetts.

[3] Putnam, (d), 8; (e), I. 8: 50.

Commencing in 1894 as a field explorer, Colonel Young gave particular attention to the Mammoth, the Salts, and the Colossal caverns; but like his predecessor, Professor Putnam, he seems to have found most of his specimens in the Salts Cave. In this last-mentioned place he made several new observations. Thus he located and worked a refuse deposit directly inside the entrance; he observed — as did the writer — that the salts efflorescing on the cave walls had in many places been carefully scraped away, though whether by the aborigines or not is uncertain; and he found places in the cave where an ocher-like clay had been dug. He also made note of the fact that worked and reject flints, etc., are strewn over the cultivated fields for a hundred yards or more around the entrance to the cave, indicating, probably, the former presence of a village or a workshop. Of movable cave artifacts he secured a long and interesting list, and I will cite those things not already included among Professor Putnam's finds. The list follows:—

1. Cords, two, three, four and five stranded, twisted, plaited, spliced.
2. Cloth, different weaves, some white striped.
3. Matting — reported found.
4. Moccasins, braided of cattail, of inner bark, of wild hemp; mended.
5. Reticule or bag, 8 by 12 inches, woven, with two handles of plaited cord.
6. Headdress of basket work of split cane.
7. Turkey feathers with perforation.
8. Cup made from squash shell or rind.
9. Bottle of gourd, half-gallon capacity.
10. Vessels of gourd, one showing evidence of boiling by means of hot stones.
11. Platters made from gourd and mended, with string.
12. Bowl or platter of sassafras wood, fragment of.
13. Digging or planting sticks.
14. Ladders of oak sapling and cedar, with branches.
15. Scrapers of mussel shell.
16. Bone awl.
17. Notched flint ax.
18. Chisel-like celt.
19. Pestle of stone.
20. Pottery vessel.
21. Bundles of firewood and faggot reeds.

22. Gourds and gourd seeds, some of which have been germinated.
23. Squash and squash seeds.
24. Watermelon rind and seeds.
25. Corncobs, apparently of three different varieties.
26. Sunflower head.
27. Wild grape stems.
28. Human excrement, indicating that sunflower and watermelon seeds; also hickory nuts, formed part of diet.
29. Tobacco leaves and seed pods.

This series of specimens, and others not mentioned — being simply duplicates of Professor Putnam's list,— were either found by Colonel Young or came under his direct observation and are nearly all illustrated in his book. I have not had opportunity personally to examine either this or any of the preceding collections, though probably even the oldest are still in part extant; and I have cited these lists merely for what they may be worth without comment and without accepting any responsibility for their absolute correctness.

There is one critical observation to be made in reference to Colonel Young's collection, and that is that he failed to keep separate his finds from the interiors of the caverns and those from the camp refuse worked over by him in the entrance to Salts Cave. This is unfortunate because, as will be made clear later on, it is possible that the two groups of data did not belong to the same culture level and were therefore very likely not contemporary. When at Salts Cave I personally devoted some hours to searching in the entrance for refuse beds which had not already been overturned and the meager traces that I found yielded data of a character identical with the findings in the Mammoth Cave vestibule.

PRESENT DISCOVERIES.

ARTIFACTS.

Summary List. We come finally to a brief consideration of the Museum's own data, obtained in part as a gift and in part by the writer while at the caves.

Referring to the specimens donated in 1913 by the Mammoth Cave Estate, it should be stated first that they appear to have been found, all of them, in the Salts Cave. A few articles are not strictly of archaeological value but eliminating these we may itemize the remainder as follows:—

1. Bundles of raw textile materials: flags, grasses, etc.
2. Cords, twisted and braided.

3. Cloth, a small fragment of — probably part of a moccasin.
4. Moccasins, two, adult size, with cord lacings (?).
5. Child's moccasin.
6. Deerskin, fragment of.
7. Torch of cane reeds tied together.
8. Knitted bands of grass and bark — probably from torches.
9. Bundle of ordinary sticks.
10. Two sticks spliced or tied together with cord.
11. Charred poles with marks of stone ax.
12. Gourds and squashes, large fragments of.
13. Sunflower head, portion of.
14. Tobacco leaf.[1]

In addition to the above I collected personally in the interior of the Salts Cave the following:—

1. Corncob, portion of.
2. Human excrement.[2]

While from the interior of the Mammoth Cave were obtained:—

1. Knotted torch wrappings of bark.
2. Strings of different kinds.
3. Torch of reeds tied with bark.
4. Poles hammered and cut with stone tools.
5. Gourd fragments.
6. Human excrement.
7. Worked and reject flints.[3]

A desirable completeness might be attained perhaps by figuring and describing in this place each of the listed items. However, I venture to refrain partly because of the relatively limited range of the data and partly also because most of the items have been described more or less satisfactorily a number of times already in the cited bibliography. A few additional observations seem to be in place nevertheless with reference to the textiles; while the last item in the list, the worked flints, forms an entirely new lead which calls for special consideration.

Woven Moccasins. The shapely, slipper-like moccasins described and figured by Col. Young and others[4] are represented in the American Museum collection by three very frail and fragmentary examples. Two are of adult size, their extreme lengths being about 8½ inches; the third is of child size or barely 6 inches long, measured externally. In addition, there is a small textile fragment which, though of different technique, resembles the style of weave employed in most of the specimens illustrated by Col. Young and is probably part of a fourth moccasin.

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[1] Cat. nos. 20.0–5763–5778.

[2] Cat. nos. 20.1–215–216.

[3] Cat. nos. 20.1–136–143.

[4] Young, 301–2, 306–7; Moorehead, (c), 236; Holmes, (a), Figs. 67, 101; (b), Fig. 9.

Each of the four specimens appears to have been woven of some kind of grass, the blades alone having been used. Neither the warp nor the woof element is appreciably twisted on itself. The warp strands (18 in one specimen and 20 in another) run lengthwise, i. e., from heel to toe, and the woof element (or elements) crosses these for the most part at a right angle. The crossing is effected in one of two ways — either in plain wickerwork fashion or in simple twined fashion, but each technique with a special modification imposed perhaps by the uniqueness of the task in hand. The variation from the normal wicker technique lies in the fact that two woof elements are used under circumstances where only one would seem to be necessary and that one of these woof elements always passes around the right marginal warp but never the left, while the other woof element always passes around the left marginal warp but never the right. An examination of Fig. 5 should make the facts clear. The variation from the normal twining technique consists simply in the fact that the successive courses of the twined woof elements are twisted in opposite directions (see Fig. 6). Why this should be so can only be conjectured. Perhaps the resulting pattern was more pleasing; but, more likely, it was another scheme by which to avoid passing both woof elements over the marginal warp strands. To be sure, as may be found by experimentation, it is possible to turn the margin by only one woof strand and still keep the usual direction of twist, as in ordinary basketry, but it would leave the margin of the moccasin

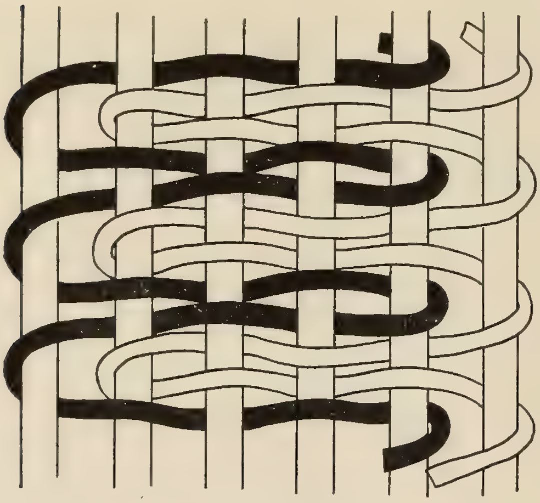

Fig. 5.

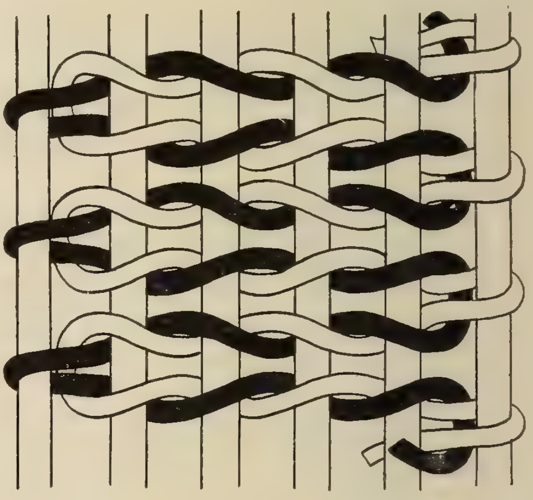

Fig. 6.

Fig. 5. Principle of Wicker Technique employed in Kentucky Cave Moccasins.
Fig. 6. Principle of Twined Technique employed in Kentucky Cave Moccasins.

somewhat weaker. In other words, it seems probable that the manner employed was a studied technical requirement. The next question to arise is: why should the marginal warp strands never be turned by more than one of the two woof elements? Again, though there is not enough material at hand by which to prove the case, I am strongly inclined to the opinion that it was a purely technical requirement. The weaving process began at the heel and ended at the toe, or rather in a median line above the toes. By omitting to pass one of the two woof elements over the marginal warp strands the woven portion of the moccasin advanced somewhat faster in the middle than along the margins and this enabled the artisan to swing the two edges together over the toes in a perfectly natural way.

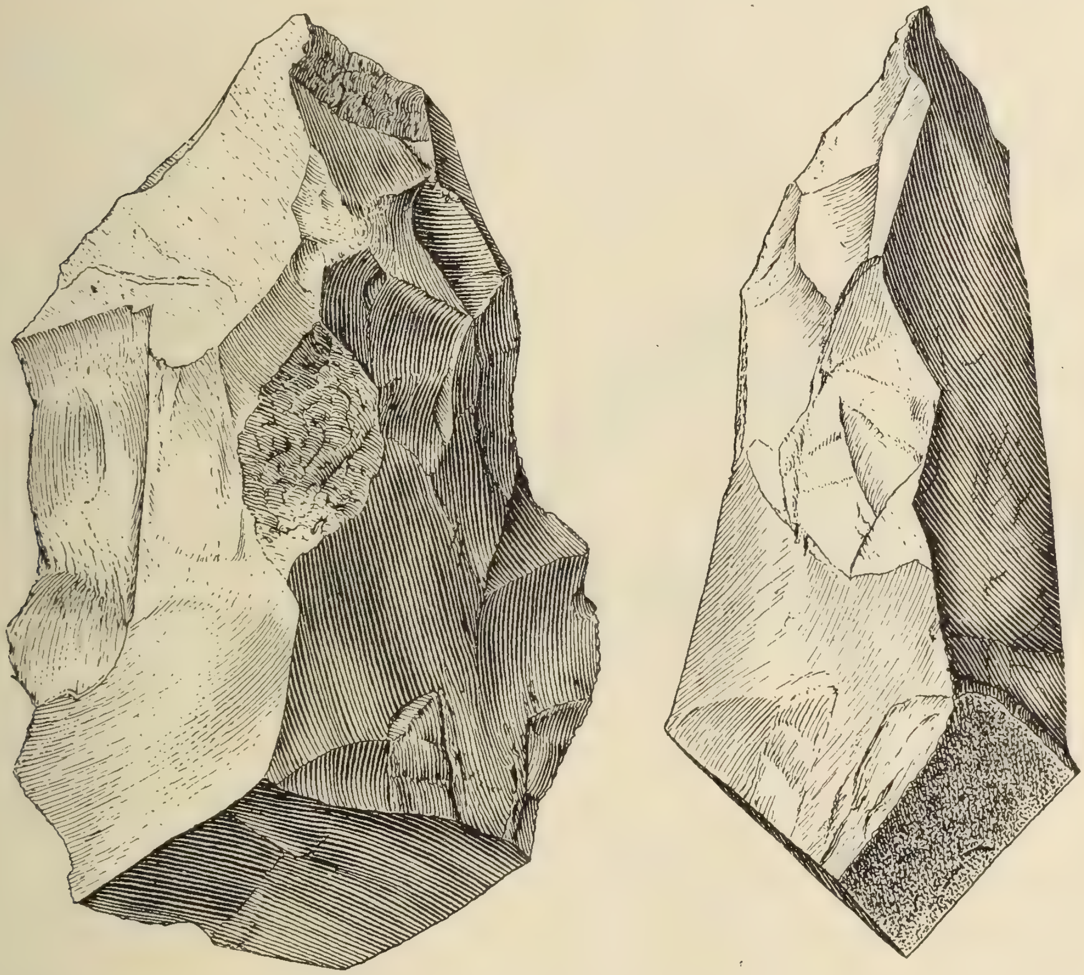

Fig. 7 (20.1–145). Roughly Blocked Out Implement from Flint Dome, Mammoth Cave. Nat. size.

Without elaborating the facts any further in this place, we may close the subject by observing that the manufacture of moccasins of this type involves an extremely curious combination of basket-making and weaving principles, well worth further study.

Worked Chert. In looking over the published map of the Mammoth

Cave a place called Flint Dome was noticed. Later, when in the cave, I inquired about the place and the reason for its name. The answer was that flint occurred here and also in the neighboring passages. Mr. Louis Bransford, who was guiding, had not visited the gallery for many years and we experienced some difficulty in locating it. The floor of the narrow passages leading to our destination showed traces of both ancient fires and scattered torch reeds. But what was still more interesting was the fact that the flanking walls presented a slightly differentiated seam of rock, about two feet thick, studded with nodules of chert or hornstone. These nodules were of different sizes and projected varying distances from the wall. The projecting portions had in a great many instances been struck off, leaving exposed in the dull-colored matrix the bright blue-gray interiors of the nodules.

Here and there on the floor lay numerous incomplete nodules and fragments, some with and some without incrustations. Handling a few of these I soon found two which appear to have been worked. One (Fig. 7) is a roughly flaked core of the *coup-de-poing* type, the beginning probably of a knife or a projectile point of some sort. The other (Fig. 8) is a partly incrusted flake with unmistakable evidence of chipping or retouching along one edge. This latter is strongly suggestive of the *grattoir carêné* or keel scraper so typical of the Aurignacian culture horizon in Europe. But while such a resemblance exists and there is probability also of the specimen having been used after the manner of the Aurignacian planing-tool, the particular form here shown is no doubt purely accidental. The point to be urged here is not that this or that type of flaked or chipped stone implement was made but rather the fact that raw material for such things was obtained in the cave.

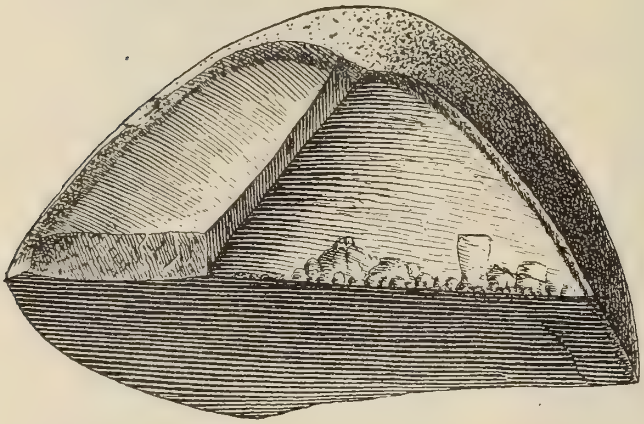

Fig. 8 (20.1–144). Scraper-like Implement from Flint Dome, Mammoth Cave. Nat. size.

The excursion to Flint Dome was made at the end of a long exhaustive day's work and the examination given the locality was consequently far from thorough. Nevertheless, the sum of the evidence establishes beyond reasonable doubt that the Indian quarried chert in the recesses of the Mammoth Cave. Very likely most of the chert fragments discovered in the vestibule excavations and also those found in the field about the entrance were obtained from outcrops in the cave similar to the one above described.

If then, as we have seen, worked as well as reject flakes of chert are likewise strewn in quantity around the entrances to the Salts and Curtis caverns — not to mention others — is it not a reasonable inference that the aborigines have also quarried in these caves? My own conclusion is, therefore, that whatever other purposes the Indian may have had in exploring the caverns, the search for raw material for tools and weapons was one.

GENERAL OBSERVATIONS.

Besides the collected specimens — identical in nature with those of preceding citations — independent notice was taken also of many collateral facts observed over and over again by prior visitors and investigators.

In Salts Cave particular interest attaches to the so-called Mummy Valley chamber. There seems to be a considerable amount of ashes here, but whether the powdery material is really camp refuse I found no opportunity to determine. If camp refuse, then it must be that there was, in aboriginal times, an entrance to the cave near this place, for it is altogether improbable that anybody should have carried firewood, torch material, and all the other necessities of life by way of the present entrance and a mile and a half or so beyond it into the interior.

In the Mammoth Cave the commonest evidences of aboriginal visitations — scattered reeds, fireplaces, etc.,— are most frequent in the main cave passage. They begin immediately beyond the century-old saltpetre works and continue to the Black Chamber; then there is an apparent cessation until Chief City (about three thousand yards from the entrance) is reached and beyond which the guides said very little was to be seen. But some of the side galleries were also explored by the Indian. Thus, a large gourd fragment and other things were turned up a considerable distance out Blue Spring Avenue; reeds occurred in the passage connecting Cataract Hall and Fairy Grotto; and lastly, as we have just seen, worked chert fragments were found in the passages leading off to Flint Dome. There can hardly be a doubt that a thorough archaeological exploration would show the Indian to have visited all the readily accessible parts of the cave.

Having considered the general nature of the cave artifacts, it seems well to record also a few observations as to their principal modes of occurrence and the possible significance attaching thereto. Ordinarily, the cave floor is piled unevenly with rocks and boulders, but in some places it is covered with a deposit of fine yellow sand — the same sort of sand as was found in the vestibule excavation and presumably of fluvial origin. This material is today being used for dressing the tourist paths so that here and there pits have been dug into it and examination is possible. The formation is normally dry as dust and, what is more strange, often conspicuously loose and structureless in the upper horizons, as if it had been handled. We dug into it in many places and found sections of charred cane, sticks, bits of string, pieces of gourd, etc., at various depths, but no human bones as we had hoped. The buried artifacts were commented upon by the Mammoth Cave personnel as normal occurrences. Mr. Edward Bishop, a reliable old guide, related that among other things a moccasin had been found some years ago in the vicinity of Snowcloud at a depth of more than two feet in this sand and beneath a boulder too large for one man to move. Whether this be literally true or not is of no particular moment; the topsy-turvy condition of the upper level of the sand formation is a fact, and a fact rather difficult to explain. It seems plausible, however, that prior investigators, like ourselves, may have regarded these sandbeds as desirable burial places and in their hunt for skeletons they may have overturned the material. If the disturbance is due to the Indian, as it may well be, he would seem to have handled the sand for other purposes than interment or else he must have removed his dead on departing from the locality — a rather unlikely supposition.

But so far as reports and appearances go, the evidences of aboriginal frequentation are most common in the rocky portions of the cave. Naturally, after more than a century of tourist traffic through the main avenues of the Mammoth Cave little of importance is to be found except by painstaking search. In the Salts Cave, however, conditions must until recently have been quite different for neither Professor Putnam nor Colonel Young experienced difficulty in getting their respective collections, the items of which were found lying sometimes on the rock blocks but more often in crevices between them. In the Mammoth Cave today all that can be found on the surface in the way of strictly aboriginal artifacts are occasional bits of cord, knotted strips of bark from some torch bundle, chopped sticks and such like. On the other hand, broken sections of partly burnt cane[1] are exceedingly common, at least in certain localities; and we may perhaps elucidate the subject to best advantage by considering in detail what seems at present to be the most important of these centers of intensification, known in cave geography as Chief City.

Chief City is an immense dome situated in what is generally referred to as the Main Cave passage and fully three thousand yards from the entrance. It is the result of a tremendous tumble-down of rock which now rises from the normal floor level like a great heap of talus and over which the traveler has to climb. By inference from the published dimensions of the dome itself, this small mountain of débris measures about 300 by 550 feet on the horizontal and the height may be anywhere from 60 to 100 feet — I neglected to estimate it. In other words, the floor space within the limits of the great dome is unevenly heaped with a confused mass of broken, sharp-edged boulders, affording hardly a solitary spot sufficiently smooth and level for a man to lie down in. Nevertheless, reports (Hovey, 65–66) have been handed down to the effect that this place was a special rendezvous of the aborigines. Thus, the first white explorers are said to have found here implements and pottery as well as blankets of woven bark; and a certain Dr. Bird is quoted as having discovered in 1837 "astonishing unaccountable quantities" of cane, woven moccasins, and other remains. The combustible materials, according to the early cave managers and visitors, were sufficiently plentiful to be used in kindling bonfires with which to illumine the dome. Today no artifacts are to be found, but short sections of partly burnt cane are still thickly scattered and fireplaces are also noticeable in different places, though none with any considerable heaps of ashes.

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[1] A species of cane seemingly smaller but probably identical with that found in the cave still grows along the banks of the Green River, and a specimen brought away has been identified by Dr. Barrington Moore of the Museum Staff as *Arundinaria tecta*. Experimentation has not yet been carried out under proper conditions, but the indications are that a bundle of cane with a slight amount of nursing will yield a fairly steady flame without the application of oils or fats as some have thought essential.

Granting that all the above reports are substantially true, we have still to look for other convincing evidences that the place was in reality a selected retreat or camp. The Indian brought the combustibles and he no doubt also lighted most of the fires; but I searched his fireplaces in vain for a single trace of bone or shell, or anything else to indicate that he had eaten a meal here. I was told that shells had been found in the interior of the cave, but mere traces will hardly prove the existence of a permanent camp. Man in a state of nature is not a creature of nocturnal habits and we have no archaeological evidence to show that he ever resorted to anything so impractical and detrimental as to make his home in the inner depths of caverns. The idea is absurd! Yet primitive man seems to have explored caves the world over and his reasons for so doing are in most instances not at all clear. It is easy to give way to romancing on the subject and to say, e. g., that the Indian explored Mammoth Cave out of simple curiosity; but when the dangers and difficulties are soberly considered the explanation is not plausible. Neither does he appear to have used the cave as a "picture gallery" as was ostensibly the case with some of the early peoples of the Old World. With somewhat more show of reason it might be urged that the cave visitors interred their dead in the far interior as well as near the entrance; still, even if concrete evidence were present, such a custom could hardly have been general, involving as it did unnecessary practical difficulties. Chief City, at any rate, does not readily lend itself to any of these explanations. The great dome, as has often been suggested, might have served for "secret council" meetings though hardly for ceremonies including dances; but why resort should have been had to this far-off place when there were others better adapted and just as secure much nearer to the entrance is hard to understand. It is thinkable also that the Indian brought hither great quantities of combustibles for purposes of lighting up the dome merely to satisfy his awe of its dimensions or perhaps to light his way across the chaotic mass of débris, but the size and situation of the fireplaces rather belie any such theory.

Shall we then conclude that the archaeological facts related in connection with Chief City are unexplainable? The answer must be both yes and no. Any one or all of the offered suggestions may be correct but the facts of the case do not prove them to be so. The facts, in short, do not furnish their own solution and our only recourse is to impose one, so to speak. Whether we shall hit upon the right explanation or not there can be little doubt that it is in reality very simple. Primitive man performs many acts which from our point of view are absurd and unnecessary yet he himself has usually a thoroughly practical end in view. The longer one deals with the mute evidences of early human intelligence the more one is impressed with the soundness of judgment exhibited in practical matters. In the present case the immediate purpose of bringing cane into the Mammoth Cave was of course to furnish material for illumination; but precisely why stationary fires should ever have been built in certain localities we cannot tell — if indeed these fireplaces are anything more than the remains of planted torches. As to the final purpose of lighting up the cave galleries, we have thus far only two or three suggestions. The first is that the Indian entered the forward part of the cave to dispose of his dead, the second that he explored somewhat farther into the interior for chert, and the third (as is suggested by the Salts Cave) that he scraped salt from the walls perhaps for medicinal purposes. If he had other reasons for venturing as far as Chief City and beyond they are not apparent. My personal opinion is therefore that Chief City was nothing more than an advance post in the Indian's cave exploration — a place where he collected quantities of torch material to be used for further exploration in all directions.

SUMMARY AND CONCLUSION.

We have considered somewhat more at length than was originally intended the archaeological data derived from the Mammoth and neighboring caverns off and on during the past century. The earlier discoveries consisted of mummies or desiccated bodies some of them secreted in stone graves and accompanied by artifacts of a particular stamp. The later discoveries, including those made by the writer, embrace mainly artifacts of the same nature as those associated with the mummies but which were found scattered loosely about on the cave floors, proving incidentally that the Indian besides burying his dead in the caves also explored their interiors for purposes of quarrying chert. The identity and nature of the two groups of archaeological cave remains are accepted to mean that they belong to one and the same people or culture group and we shall try to show in the following pages what has already been suggested, namely, that this culture group is one with the so-called stone-grave people who were moundbuilders and who maintained their chief traits down into historic time.

ROCK-SHELTER NEAR BONE CAVE.

Situation.

The one rock-shelter singled out for special consideration in this report is located some five or six miles down the Green River from Mammoth Cave Landing. The intervening course of the stream is, however, so excessively winding that the airline distance in question is probably less than three miles. So far as could be learned from local residents the place has no special name but its identity is easily fixed. It occurs in the right-hand limestone escarpment, opposite the lower end of Boardcut Island and about two hundred yards, or less, down stream from the locally well-known Bone Cave. Below it, perhaps three quarters of a mile, is another cavern known as Haunted Cave. A sort of gulch runs up the steep rocky bank from the water's edge to the shelter, which is easily caught sight of, at least when foliage is absent from the trees and bushes which screen the bluff.

Our discovery of the shelter was incidental to a search for the much talked of "Bone Cave." My guide and workman had not visited the locality for nearly twenty-five years, at which time he obtained "whole baskets full of human bones" in the cave.[1] On the present occasion, he at first mistook the shelter for the Bone Cave and on seeing his error left me at the former while he looked around for the real object of our investigation. During his absence I dug a test pit in the floor, made some interesting discoveries, and took a few rough notes and photographs, hoping some time to return and clear out the place. The prompt arrival of the already belated winter prevented this return, and in consequence the data to be reviewed are of a very rough and fragmentary character.

General Description.

The floor of the shelter was judged to be fully forty feet above the normal river level yet it had at some time been flooded to a depth of two or three feet, as was shown by mud adhering to the rock wall and other indications of the high water mark. Semi-oval in outline, this "rock-house," as such places are called in local parlance, stretches about thirty feet along the cliff and the overhang measures as much as fifteen feet from front to rear. The place faces the sun and is a convenient and comfortable shelter, at least for summer use. The floor was strewn with slabs of rock dropped from the ceiling some four to six feet above.

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[1] Unless there is some other Haunted Cave in this section of Kentucky, the present Haunted and Bone caves must have exchanged names since Lucien Carr collected skeletal material in the former (see Putnam, (e), Vol. II, 15, 209) because the Haunted Cave shown to me is unsuitable for sepulchral purposes.

Excavations and Results.

The downstream half of the shelter floor appeared to contain some earth as well as rock and in about the middle of it a small pit was opened which ultimately expanded into a cavity something like 5 feet wide, 7 feet long, and 2½ feet deep.

Relic-Bearing Dêbris and Contents. After removing a thin covering of earth there were encountered two layers of closely fitted pieces of limestone each about three inches thick and evidently broken remains of large slabs which had fallen *en masse* from the ceiling. Beneath was another stratum of earth and then again a bed of rock, which later turned out to be a stone grave. The earth referred to averaged five inches in thickness and in about the middle of it there was a thin streak of ashes and charcoal. Special examination of these ashes brought to light several bits of animal bone, four small flint flakes, one fragmentary blade chipped from the same material, and four very small fragments of pottery. There can therefore be no question as to the débris being genuine aboriginal camp refuse, even were it not true that pottery had before been reported from rock-shelters in this general region.[1]

The potsherds alone may deserve a few words of comment, though very little can be said about them, as the largest fragment at hand is less than one inch square and no more than three-sixteenths of an inch thick. On closer scrutiny the sherd appears striated as if "wiped" in finishing. Its color on the outside is faintly reddish but the inner surface is black and crackled. The paste is heavily tempered by coarse crystalline rock particles — a fact of some interest because the large collection of pottery fragments recovered many years ago by the American Museum Expedition to the Fox Farm, in Mason County, northeastern Kentucky, appear invariably to be tempered with crushed shell.[2] In general, however, the ware seems to conform to that typical of the region at large and which, as far as I have observed, is of only ordinary excellence.

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[1] Putnam, (b), 316; (e), 209, 491.

[2] Smith, (a), 190.

Stone Grave and Contents. The second deposition of rock encountered in the excavation exhibited relations indicating the presence of a grave, which was ultimately laid bare as shown in Fig. 9. It is, of course, an example of a mode of burial with which we are already familiar not only in Kentucky but in surrounding states. The cist in this instance is roughly oval in outline, measuring about 2 feet 6 inches by 3 feet 8 inches on the inside. It was constructed of twelve or thirteen slabs, of medium and small sizes, set up on edge and covered with two large slabs suspended about one foot above the bottom of the chamber, which was itself paved with small thin fragments of rock. Of the upright slabs there was one at the head (up-stream) and one at the foot which were exactly opposed and which in other respects appeared to be the principal rocks. The grave chamber was run practically full of solid earth, which when removed revealed the flexed remains of an adult female lying on the left side, head southeast, face southwest. The recovered parts of the skeleton are fairly well preserved; but, strange to relate, the lower jaw is missing. Probably no special significance attaches to this fact, however, because some of the larger bones show much evidence of having been gnawed and it is entirely possible that some rodent

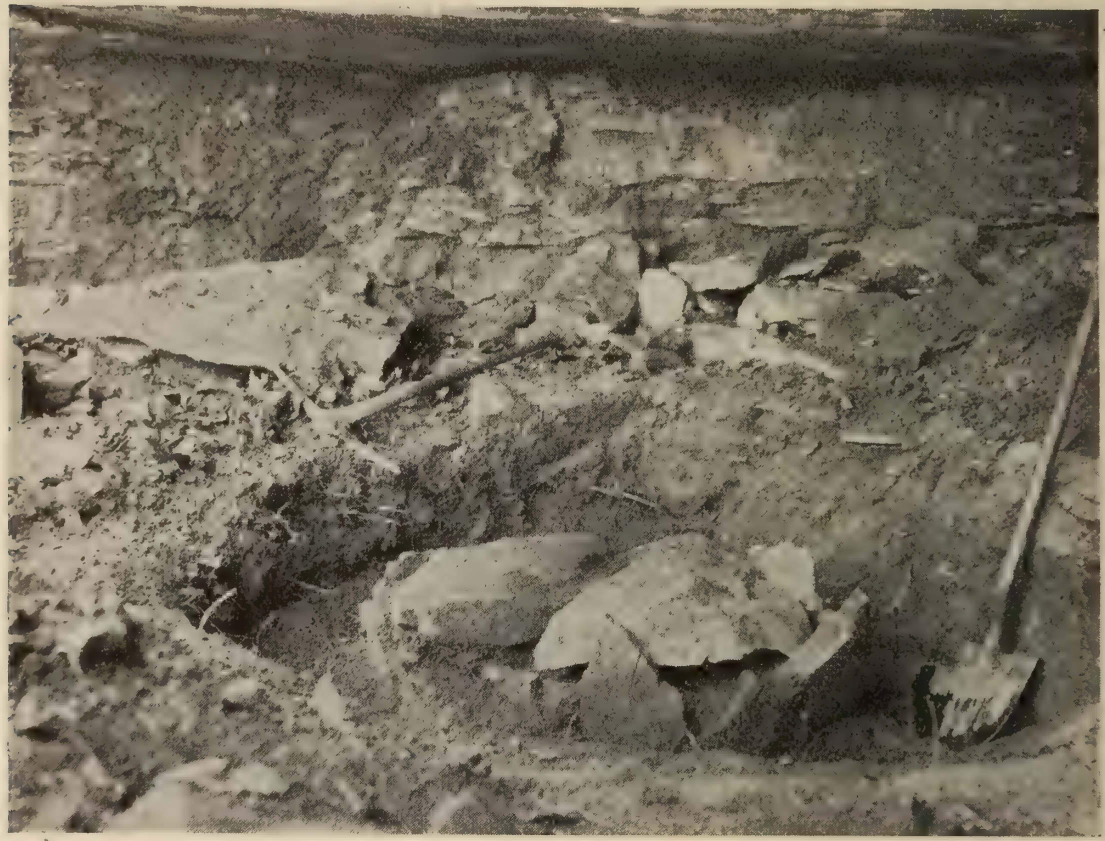

Fig. 9. Stone Grave in Rock-Shelter on Green River near Bone Cave.

carried off the mandible. The individual appears to be of slight build, with a skull bordering on brachycephaly, the index being about 79.29.

Not a single artifact was found to accompany the remains, but this also, according to Professor Putnam and others, appears to be nothing unusual.[1]

GENERAL CONCLUSIONS REGARDING LOCAL CAVE AND ROCK-SHELTER REMAINS.

It is to be regretted that the entire shelter was not cleared out although in reality little is to be expected from it. The meager finds in and of themselves prove very little more than that the site was used first as a burial place and at some later time as a temporary abode, unless perhaps the ashes and fragmentary artifacts were burnt offerings of things properly belonging to the grave. In either case, however, both the nature of the grave and the presence of pottery above it links the rock-shelter find on the one hand to the previously considered discoveries in the interiors of the Kentucky and Tennessee caverns and, on the other hand, to the vanished "stone-grave" culture centering in the Cumberland Valley, but extending over the entire east-central portion of the Mississippi Basin.

Stone graves have been found before in rock-shelters[2] and sometimes with all the buried remains preserved intact, precisely as in the case of the previously described cave mummy finds. But, as is well known, most of the stone graves occur in the open, i. e., in cemeteries,[3] in village sites,[4] in earthwork enclosures,[5] and in mounds[6]; and it is at first somewhat startling to learn that even here, under far from favorable circumstances, associated perishable artifacts, such as textiles, have occasionably been preserved. There is, however, little room for astonishment on this point, for one cannot read the French and Spanish exploration narratives covering the southeastern states without recognizing some of the archaeological specimens cited from the Kentucky and Tennessee caves. The inevitable conclusion is, therefore, that the cave data are representative of the mound-builder culture, which culture we know to have persisted down into historic times. Cyrus Thomas did not hesitate to pronounce some of the stone graves to be of even recent date[7] and with equal assurance he ascribed the majority of them to Shawnee and Delaware Indians.[1] But we are not for the moment interested in ethnic associations. The wide range of interrelated cultural traits has been brought up merely to indicate that there are several independent lines of concrete evidence (aside from the somatic possibilities) by which the Green River people can be shown to have been members of the mound-building tribes and that the archaeological material collected, say in Mammoth Cave, need not necessarily be regarded as more than three or four hundred years old.

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[1] Putnam, (e), Vol. III, 164; Moorehead, (a), 120; Moore, 485; Thomas, 452.

[2] Fiske, 303–4; Thruston, 47–48.

[3] Jones, 7; Thomas, 134–140.

[4] Smith, 229, 232.

[5] Thomas, 452.

[6] Jones, 37; Mills, (g), 124; Putnam, (e), Vol. II, 342; Thomas, 302.

[7] Thomas, 136, 690–701.

With this conclusion fixed in mind let us now proceed to an examination of the archaeological data discovered in the Mammoth Cave vestibule, data which it seems to the writer belong to a different stage of culture.

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[1] Thomas, 692, 697, 698, 700.

MAMMOTH CAVE VESTIBULE.

SITUATION.

The entrance to the world-famous Mammoth Cave is located in the bottom of a deep forested ravine which drains into the Green River from the left side, directly above the head of steamboat navigation.[1] The distance down the ravine to the river is about six hundred yards and the distance to the head of the ravine, i. e., to the top of the plateau, is something less than two hundred yards. The elevation of the entrance is a little over one hundred and ninety feet above the normal river level and about sixty-five feet below the surface of the immediately surrounding country. The general trend of the vestibule and forward end of the main cave passage is from the southeast to northwest, the entrance facing in the latter direction, down the ravine.

ORIGIN AND NATURE OF ENTRANCE.

Whether there is any causal connection between the cave and the ravine does not particularly concern us, but the fact that the axes of the two practically coincide suggests the possibility that the ravine is in part due to the collapse of the forward end of the cave. In any case the present entrance is of secondary origin, having resulted from the collapse of the cavern roof due to the weakening by surface erosion in the bottom of the ravine directly above it. The rock and soil which fell produced a dam, as it were, across the passage and the modern visitor, to enter the cavern, simply comes to the bottom of the ravine, below the break, and walks down the steep slope of this débris. All the drainage coming down the ravine from the plateau now falls over the upper edge of the break and lands at the foot of the dam, but ultimately finds its way through this loosely packed obstruction and continues down the ravine to the river.

The position of the original entrance is of some concern to the archaeologist. It may have been either a couple of hundred feet farther down the ravine or it may have been through the entrance to what is known as Dixon's Cave, some three to four hundred yards to the north. If the old entrance was only two hundred feet or less in front of the present one the cave inhabitants might possibly have lived in the vestibule, as determined, though the daylight reaching them would have been negligible. If, however, the old entrance was by way of Dixon's Cave then it is reasonably certain that the Indian did not camp in the Mammoth Cave until after the present entrance was formed. But whatever may be true about the old entrances — and it is by no means impossible that the two were open at the same time — the presumption is strongly against habitation at that early date.

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[1] The cave is ordinarily reached over the Louisville and Nashville railroad by way of Glasgow Junction.

AGE OF ENTRANCE.

The implied age of the present entrance is a pertinent question for discussion. Perhaps expert opinion might differ on this point although geologists acquainted with the facts of erosion and deposition would hardly deny a respectable antiquity. It is my own opinion that the entrance originated simply as a sink-hole. At the time the vault underneath was 25 to 35 feet high and the roof, when it collapsed, fell *en masse* to the floor of the cave passage leaving a deep hole, measuring about 35 to 70 feet, in the bottom of the ravine. Now from all reports this hole when first entered, over one hundred years ago, was almost completely filled with rock and timber and alluvium rolled or washed into it from the ravine above. There is no certain way of measuring such accumulation, but in view of the fact that the roof-break was near the head of the ravine and the amount of drainage consequently very limited, it seems a safe guess that it involved a really considerable period of time. How long, whether one thousand or ten thousand years, would suffice to choke the entrance to the Mammoth Cave we shall have to leave for others to decide: the archaeologist may rest satisfied for the present at least in the assurance that the age of the entrance puts no narrow time limit on the occupation of the cave by the early aborigines.

DESCRIPTION OF THE VESTIBULE.

Descending about thirty-five feet down the artificially created débris slope fronting the yawning entrance, the visitor finds himself on the floor of a large vestibule or antechamber. At the forward end this vestibule is about 40 feet wide and 18 feet high; but a glance rearward shows the ceiling to drop and the walls to draw in, so that at a point about two hundred feet from the entrance the passage is barely 15 feet wide and 7 feet high. Most of these facts are sufficiently apparent in the appended sketch plans (Fig.

10) of the cave, but it is to be specifically noted that the present condition is at least partly artificial, because the floor level has been raised very considerably at the front of the chamber and excavated for passage at the rear, through the so-called "narrows."

The vestibule is dry and comfortable, subject only to draught according as the out-of-doors temperature rises above or falls below the constant temperature of the cave. A small stream of water falls, as before stated, directly into the entrance and daylight at present reaches back about one hundred feet. If the entrance had faced southeast instead of northwest it would have been a most ideal place for aboriginal occupation, more ideal in fact than the long occupied Castillo Cave in Spain.

Knowing beforehand that the Indians had frequented the far interior of the cave, it was impossible while visiting the place in May to resist the idea that they had camped more or less permanently in the vestibule. Indeed the flint flakes found in front of the cave and part way down the entrance slope made it seem absolutely certain. However, the cave management informed me that the slope was graded not many years ago and that the vestibule floor had been raised and leveled by the addition of rock and cave earth brought from the interior. But Trustee Janin was interested and gladly consented to some trial excavations.

Excavations in the Vestibule.

Before describing the work done in the vestibule it may be well to state that the investigation was intended to be of an entirely preliminary character. During the tourist season it could be nothing else. In the dead of winter, when visitors are few, it would be feasible perhaps to open up an extended area of the cave floor such as would be necessary in order to get down to any considerable depth. But the work was carried far enough to determine some highly important facts, so that until the general cave problem takes a new turn the Mammoth Cave may safely rest.

The excavations began in the bottom of the ravine out in front of the cave and extended down the entrance slope and for about 175 feet back into the cave, i. e., very close to the iron gate. Three series of trial pits were dug, one along the east wall, one along the west wall and one down the center of the front slope and floor space. Those outside the entrance promised little and were therefore not developed very far except in the case of a single trench near the top of the entrance slope. This yielded nothing whatever and the excavations were therefore soon confined to the middle section of the vestibule proper where camp refuse came to light in several places. The accompanying floorplan and sections are designed to indicate the position and extent both of the relic-bearing débris and of the principal excavations made in it and near it.

East Side Trenches.

Trench I. Immediately inside the entrance there is a large "rockfill" in the floor through which the water pouring into the cave finds its way to the open ravine below. According to common report this fill occupies a depression "over twenty feet deep" a depression presumably created in part by the water carrying away the intermixed soil and in part by the water dissolving the limestone itself. As we could not expect to reach a depth of twenty feet or more, the first floor trench was located several feet inside the rockfill in what appeared to be solid cave earth.

The site selected was 37 to 47 feet from the entrance — i. e., the point at which the falling water strikes the floor — and about 10 feet from the east wall. It seemed a place at which any depth might be reached without difficulty, but at little more than 5 feet below the surface we struck the living rock, evidently the undercurving cave wall, and could go no farther. The formation encountered was a yellowish clay-like substance, seemingly identical with the leached saltpetre earth stacked in the interior cave. In the matrix were mixed rocks, occasional bits of wood, bone, etc. Evidently the material was filled in, possibly more than a century ago, when saltpetre was being produced in the cave and when a driveway for ox carts, etc., had to be made over the uneven rocky entrance floor.

Trench II. The second excavation was 58 to 73 feet from the entrance. It marked the point where the yellow clay of Trench I gave way to bedded materials of entirely different natures. One of these new formations, lying near the surface, turned out to be Indian camp refuse, but it was so loose and so devoid of bedding planes that I was unable to decide for awhile whether it was a primary or a secondary deposit — i. e., whether it lay as the aborigines left it or had been moved by modern man from some place in the interior. But after working the vertical breast back for a few feet stratification duly appeared. Lying partly beneath the loose extremity of this Indian refuse and partly beneath the adjacent yellow clay (see Sect. A–B in Fig. 10) was found a thick oblique stratum which seemed also to be refuse. It was a homogeneous muck-like substance, rather black in color and characterized by numerous small white specks which for a time were taken to be disintegrated shell fragments. There was much charcoal in it and at a depth of 9 feet was found a roughly flaked flint, but whether

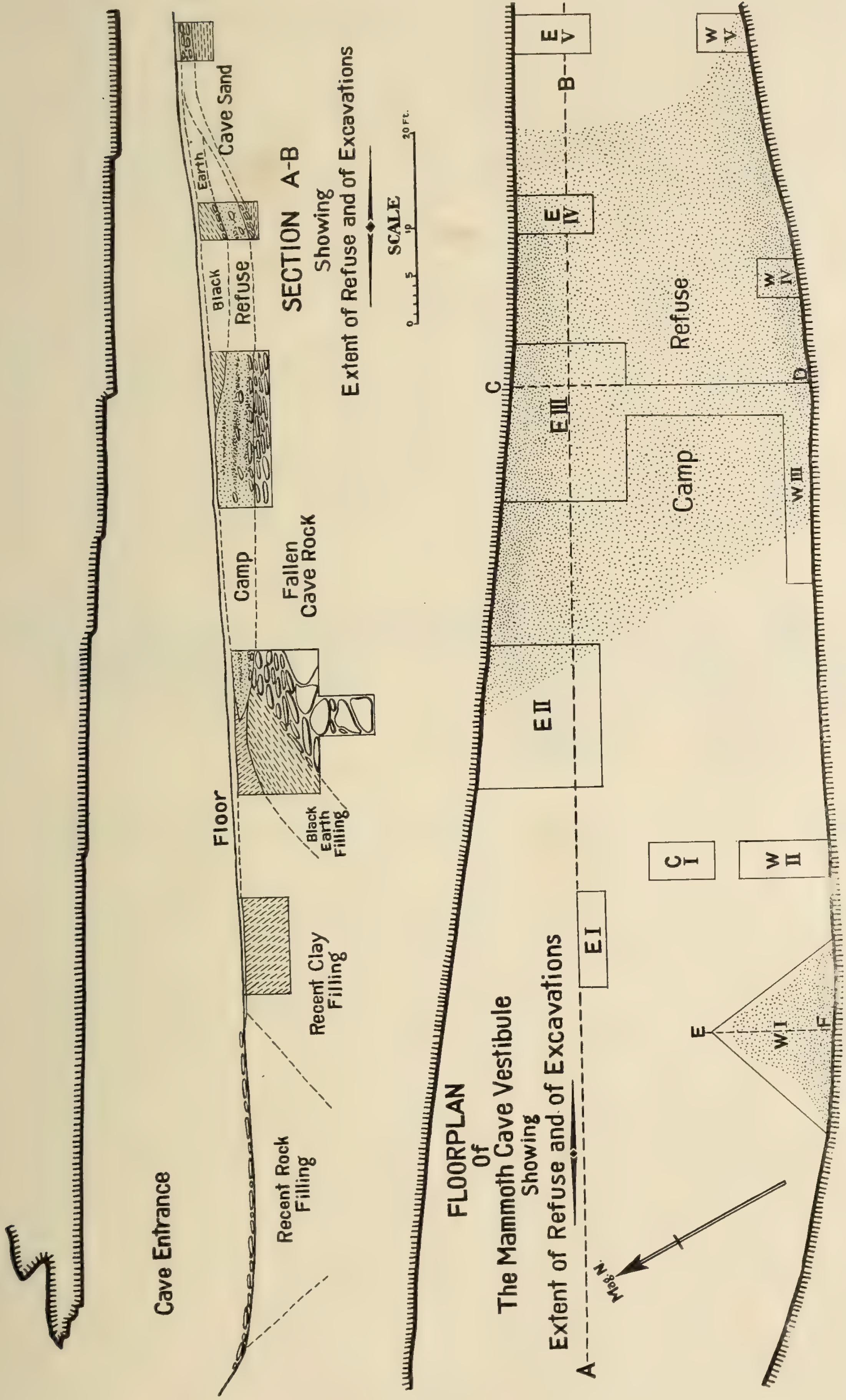

Fig. 10. Floorplan and A–B Section of Mammoth Cave Vestibule showing Extent of Camp Refuse and of Excavations.

natural or artificial would be difficult to say. In general appearance the formation seemed to be camp refuse, possibly of a very ancient date, and yet there were no animal bones, no shells, and no certain artifacts such as were found in the refuse above. On the other hand, the débris after awhile yielded bits of wood — apparently shingles — etc., and the conclusion finally reached was that it could be nothing else than modern débris.

Through this compact mass a trench had been cut, evidently a long time ago, and this trench was filled with all sorts of rubbish of a modern character. Beneath the whole we came upon broken rocks, at first small slabs and later great boulders. These latter were so large that it was impossible to carry the excavation below 10 feet, but the shovel could be let down through a crevice between two boulders fully 5 feet farther. Consequently, if there is any relic-bearing débris at this point in the cave entrance it is at least 15 feet below the present floor level.

Trench III. The next opening made in the cave floor began at a point 88 feet from the entrance and ended at 104 feet. This excavation was in the heart of the relic-bearing deposit yielding a fair number of artifacts and for that and other reasons difficult to abandon. It was finally connected with an excavation along the west wall by means of a trench running clear across the cave (see floorplan, i. e., Fig. 10). The A–B and C–D sections (Figs. 10 and 11) of this excavation show the bulk of the distinctly stratified camp refuse to lie close to the east wall where in places it attains a depth of about 4 feet, while towards the center of the cave it thins out to a mere sprinkling. The forward end of the artificial stratum rises practically to the surface while the inner end dips under a sterile layer of what is probably, at least in part, modern filling. Limestone rock closely packed and placed in position as if dropped from the cave ceiling underlies the whole excavation, and the transition from camp refuse to clear rock is somewhat gradual. Over near the east wall the rock foundation consists of immense oblong slabs or blocks producing a sort of hollow shelf on which the greater portion of the camp débris lies. The main excavation was carried down into

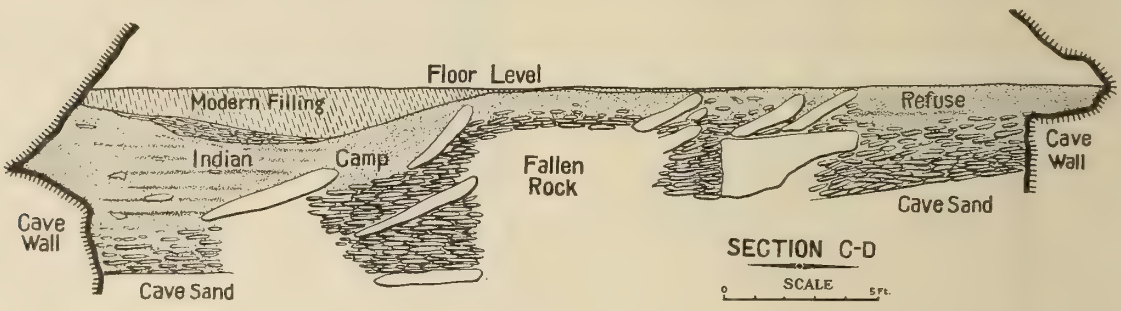

Fig. 11. C–D Section across Mammoth Cave Vestibule at about One Hundred Feet from the Entrance showing Order and Nature of Floor Deposits.

the underlying rock mass, where possible, but in general only as far as the Indian débris had sifted, which was approximately 6 feet below the floor level.

Trench IV. The last east side trench to encounter the relic-bearing stratum was dug 116 to 120 feet from the entrance. It revealed conditions corresponding in a general way to those obtaining at the inner extremity of Trench III. Beneath the thin black surface veneer came first a 2-foot layer of sterile yellow clay, next a few inches of rock mixed with black earth, then the Indian refuse 2 to 3 feet in thickness, again a layer of rock, and finally a yellow laminated bed of fine sand, identical with the sand found in the interior of the cave. As the sand was apparently of aqueous origin it seemed useless to go any deeper. The noteworthy fact, shown in Sect. A–B, (Fig. 10) is that both the upper and under surfaces of the Indian débris rise towards the rear of the vestibule.

Trench V. The last trench indicated in the general A–B section conformed entirely with the suggestions of the preceding excavation. After passing through less than 2 feet of broken rock the fine sand appeared at once. This sand, as already stated, was carried to its place of deposition by flowing water and it is therefore very unlikely, in view of the position and general nature of the vestibule, that aboriginal remains are to be found beneath it.

The West Side Trenches.

Trench I. This excavation, begun as a trench projected along the wall from about 20 to 40 feet inside the entrance, became a triangular cavity before it was finally abandoned. A glance at the general floorplan shows that a small pocket of relic-bearing refuse was found at this place. The accompanying E–F section (Fig. 12), taken at the point of maximum expansion of the débris, indicates a rather suggestive phenomenon. A layer of modern filling, consisting mainly of red clay, will be observed to cover the greater portion of the refuse; but for a distance of about 2 feet, next to the limestone wall, the plainly stratified Indian débris rises practically to the surface, attaining a depth of about 16 inches. The under surface of the débris is nearly level, resting as it does in part on a shelf of living rock covered with a trace of aqueous sand. Everything about the section is normal except the sudden drop of the upper surface of the refuse. The alternating layers of ashes and black débris are left hanging in the air, as it were. In other words, the indications are that a portion — probably the greater portion — of this refuse deposit has been removed. How this was done could not be verified but it seems most probable that it was accomplished by the swirling waters of a pool created in the entrance to the cave perhaps at times of abnormal precipitation. Closer study of the section will throw some light on the amount of material removed. The white and dark streaks in the refuse section are observed to thicken and also to rise towards the right, i. e., in the direction away from the cave wall towards the center of the vestibule. This fact can mean only one thing, viz., that we have preserved for us merely the shallow periphery of the original relic-bearing deposit. How large the deposit was, is of course impossible to say, but the evidence at hand seems to warrant the opinion that the Indian camped here for a long period of time. The mere fact that he camped so close to the entrance also suggests that daylight did not reach as far back in those days as it does at present. In other words, the array of facts here presented strengthens the opinion, already advanced, that the entrance to the cave was nearly closed by débris when discovered by the white man.

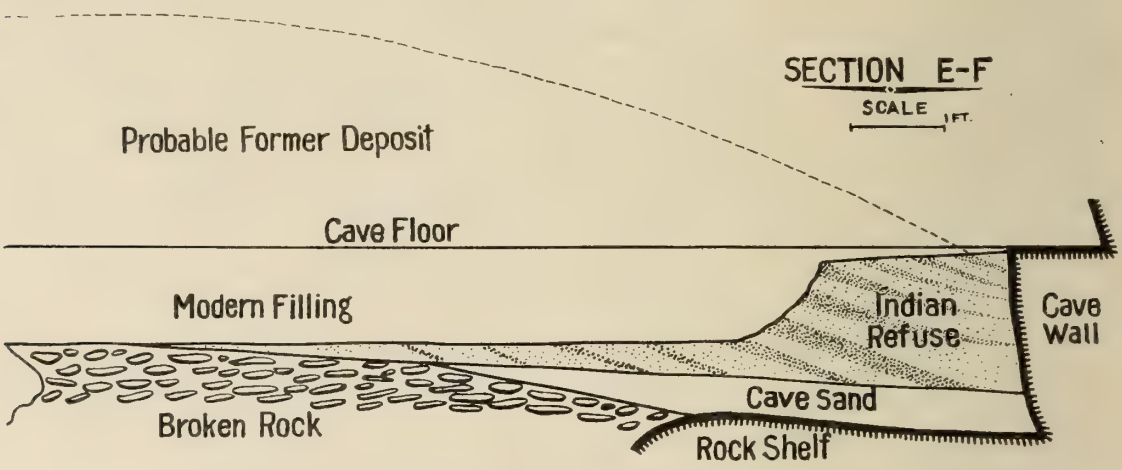

Fig. 12. E–F Section of Mammoth Cave Floor Deposits at about Thirty-two Feet from the Entrance.

Trench II. We have now considered in some detail all the more important conditions obtaining in the various excavations and may therefore pass rapidly over the remaining trenches. The present cut extended from about 47 to 52 feet along the wall and, if we group with it the adjoining center excavation (C I on the floorplan) it reached practically to the center of the cave. From the wall for a distance of 8 feet the living rock was again encountered, only 2 feet below the floor surface; but farther out no bottom was reached. Our trench proper showed alternating layers of red clay, black refuse and even some ashes, but it was sterile and undoubtedly all of modern origin. In excavation C I came first one foot of red clay, next about a foot of broken rock and then red clay again, continuing to unknown depth. We penetrated only about 8 feet of the material, which was as in contiguous trenches of the nature of modern filling.

Trench III. This excavation commenced at about 80 feet from the entrance and ended at about 100 feet. It was merely a narrow trench 1 to 3½ feet deep. At 80 feet the floor was yellow laminated sand, at 85 feet the Indian refuse commenced with a thin wedge and at 100 feet it had attained a depth of 9 to 15 inches, as shown in section C–D. The débris rested on broken rocks down among which it had sifted for a foot or more.

Trench IV. This mere test pit, located at 109 to 113 feet from the entrance, revealed conditions similar to those on the opposite side of the cave. On top was found about 1 foot of red clay (modern filling), next 2 to 3 inches of clear Indian refuse, then 1½ feet of rock mixed with refuse, and finally clear broken rock, penetrated to a depth of only 1 foot.

Trench V. The last excavation to be mentioned was located at 135 to 139 feet from the entrance, exactly opposite Trench V by the east wall. It brought to light a very shallow deposit of camp refuse constituting the floor surface and lying on a rock foundation composed mostly of large blocks. The site marks the extreme inner end of the signs of habitation in the cave vestibule.

Composition of Camp Refuse.

The deposit recognized as of aboriginal origin is composed mainly of ashes. In some of the sections obtained this substance occurred in a pure state as white lenticular streaks or beds; but as a rule it was mixed with other things — especially charcoal and presumably camp wastage of all sorts — which gave it a dull gray appearance. It was extremely dry and powdery. Omitting the artifacts proper, an ordinary ocular analysis of the refuse revealed the following components, listed in decreasing quantitative order:—

1. Ashes.
2. Charcoal.
3. Animal bones.
4. Fresh water shells.
5. Osseous human remains.
6. Fragments of sandstone — the so-called Chester sandstone.
7. A few waterworn pebbles.
8. Two or three small lumps of blue-green clay.
9. A small cemented lump of charred sunflower seeds.

The absence of bits of wood, corncobs, nutshells, etc., excited at first no particular thought. These things could have decayed, although one would suppose that objects of this character might have been preserved indefinitely under the conditions presented. But when potsherds as well as all the finer examples of polished stone artifacts, common to the region, also failed to turn up, interest began to be aroused and consequently more of the refuse was worked over than was originally intended. Nothing availed, however, and the list submitted covers everything found. Of the items thus cited only a few merit further consideration.

Animal Bones. The osseous faunal remains taken out amount in quantity to barely half a cubic foot and the individual bones are for the most part fragmentary and therefore not entirely identifiable. The more obvious forms, as determined by Mr. H. E. Anthony and Miss Mary C. Dickerson, of the Museum staff, include: —

1. Black bear (*Ursus americanus*).
2. Virginia opossum (*Didelphs virginianus*).
3. Porcupine (*Erethizon dorsatum*).
4. Virginia deer (*Odocoileous americanus*).
5. Elk (*Cervus canadensis*).
6. Dog (*Canis*).
7. Brown bat (*Eptesicus fuscus*).
8. Box turtle (*Terrapene carolina*).
9. Turtle (*Kinosternon*).
10. Turkey (?).
11. Crane (?), and probably other birds.

If we compare this with similar lists published in recent years for Delaware,[1] Pennsylvania,[2] Ohio,[3] Kentucky,[4] and Missouri[5] sites, we note, aside from the paucity of species in the Mammoth Cave (due most likely to the limited amount of work done), a general agreement. Thus the bison is absent, as is usually the case in most of the archaeological sites east of the Mississippi River.[6] On the other hand, the bat has not before been reported, but as these creatures normally inhabit caves the presence of their remains here may or may not be due to human agency. The one possible new note appears to be the presence of the porcupine, although I am not in position to say that the Green River country is beyond the normal range of this animal. No fish bones whatever were discovered; but, strange as that may seem, it accords with findings elsewhere in the Ohio drainage, even where fishhooks are present.[7] Exceptions[8] do occur, however, and this, if anything, makes the rule all the more interesting.

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[1] Cresson, 148.

[2] Mercer, 156.

[3] Mills, (b), 32; (c), 26–32; (f), 78–82, etc.; Moorehead, (b), 98.

[4] Smith, 179.

[5] Peabody and Moorehead, 118.

[6] Regarding the question of the bison and his appearance east of the Mississippi see bibliography under Allen and Shaler.

[7] Smith, 180.

[8] Mills, (b), 50.

Fresh-water Shells. From scattered places in the refuse a little over 1 cubic foot of shells, mostly bivalve, were obtained, the majority of them in an unbroken condition. Among the lot I did not myself recognize more than four or five species and of those what I supposed to be a well selected series were brought away. To my surprise Curator L. P. Gratacap of the Museum Staff and Dr. Bryant Walker have out of this possibly incomplete selection made the following identifications: —

1. *Unio crassidens*, Lam.
2. *Unio gibbosus*, Barnes.
3. *Quadrula undulata*, Bar.
4. *Quadrula coccines*, Hild.
5. *Quadrula rotundata* (*Q. tuberculata*, Raf.) Raf.
6. *Lampsilis recta*, Lam.
7. *Lampsilis ligamentinus*, Lam.
8. *Lampsilis ovata*, Say.
9. *Plagiola securis*, Lea.
10. *Cyprogenia irrorata pusilla*, Simp.
11. *Pleurocera canaliculata*, Say.[1]

Under the circumstances I shall venture no comments of my own, but will cite instead the pertinent remarks accompanying the identifications. "These shells," says Gratacap, "are not quite typically developed. They range somewhat under normal dimensions and exhibit features, in that respect, familiar to collectors in the Green River area, viz., a dwarfing in size with a moderate repression of the salient specific details. They do not, however, suggest any differentiation by reason of age from living species, and offer not the slightest criterion as to the period of their use and accumulation except that they do not postulate a very ancient date. In confirmation of the foregoing opinion, these words from Dr. Walker may be considered authoritative: 'Judging from the excellent preservation of the nacre I should presume that these shells are comparatively recent.'" The implications of these last remarks are perhaps at first a little startling. But, while admitting the correctness of the observations on the specimens in question, I think it well to reiterate that the matrix in which these shells were found was absolutely dry and subject to very little change in temperature. Under such conditions it would seem possible for the nacre and epidermis on a shell to have been preserved for a long time, if not indefinitely.

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[1] Cf. Mills, (b), 30–31; (c), 32; Smith, 180.

HUMAN REMAINS DISCOVERED.

The skeletal remains found in the Mammoth Cave vestibule are few and fragmentary and apparently of no very special significance. Nine separate finds were made, all of them in the camp refuse proper and at widely different levels. The largest fragment, found in Trench W I, consists of the distal half of an adult left femur. No study or even description will be attempted other than to remark that the anterior portion of the patellar facet and the part of the shaft directly above present a notably deep longitudinal groove. In Trench E III were found the symphyseal portion of a left female pubis, a fragment of partly charred cranium, an adult metatarsal bone, one upper molar and two canine teeth, the left half of the lower jaw of a child with two milk teeth, and finally most of the osseous remains of a foetal burial. None of the bones exhibit traces of having been cut or scraped or crushed — in other words, there are no indications about them suggesting cannibalism though the isolated occurrence of fragments might easily lead to such a supposition.

ARTIFACTS DISCOVERED.

The last and most important groups of data to be considered are the artifacts. In a sense, every particle of the refuse deposit is the work of man and our delimiting of certain elements of it as artifacts cannot but be arbitrary. Nevertheless, definition is a practical necessity and we regard as artifacts those objects which appear to have been intentionally worked or shaped for some more or less evident purpose, such as tools, weapons, and ornaments. The lateral distribution and material nature of these objects may be set forth in tabular form as follows: —

Trench	Volume	Bone	Flint	Shell	Stone	Totals
E II	20 cu. ft.	2	1			3
E III	400 " "	11	6	5	2	24
E IV	40 " "	4	1	1	1	7
W I	70 " "	4	3	2		9
W III	15 " "	6	1			7
Totals	545 cu. ft.	27	12	8	3	50

In addition to the tabulated specimens there are at hand about seventy flint flakes, presumably rejects, although many of them might easily have been used for cutting and scraping. The bivalve shells might conceivably have been put to similar usage, but not for long or the fact would have been evident.

The table as a table may be left to speak for itself. The approximate volume of refuse handled has been added for the benefit of those who may desire to figure percentages, etc. Approximate data are also at hand for the different depths at which artifacts were obtained, but as there appears to be nothing especially significant about the figures and their publication would require a much more extended table they have been omitted.

OBJECTS OF BONE.

Awls. The commonest type of artifact is a more or less sharply pointed implement of bone or antler. Of such, the collection contains twenty-four examples and at least seventeen of these may be regarded as ordinary awls. Most of the specimens appear to be made from deer bones, although a small mammal and a bird are also represented. As regards workmanship the lot falls into two classes: (1) those improvised from accidental splinters of shank bones, and (2) those carefully shaped from selected bones. The improvised class is most numerous and shows a good deal of variation as to size and somewhat as to general finish or rather lack of finish. The carefully finished class is made generally from the metapodial or cannon bone of the deer — used either entire or halved or quartered. Two specimens are curved and slender throughout, i. e., with no accommodating butt, and may be needles with the eye portion broke off. All the typical forms are illustrated in Fig. 14 and are duplicated in the cited reports of both Mills and Smith.

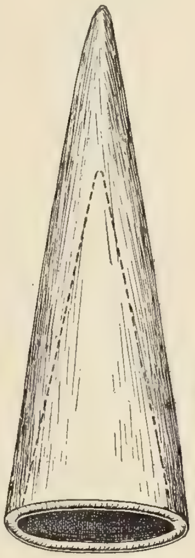

Fig. 13. Projectile Point of Antler from the Mammoth Cave Vestibule. Nat. size.

Chipping Tools. Two of the implements (Figs. 14c and 14h) are less suitable as awls than as scrapers or chipping tools. One presents a broad square-cut point like a chisel, while the other possesses a similarly dull but rounded point. Their exact use is not apparent, but while it is conceivable that they are merely awls in process of manufacture they could no doubt have been used for purposes of chipping flint.

Projectile Points. Four short stout antler points were found, resembling the class of artifacts generally grouped under the designation arrow points,[1] though occasionally also labeled spear points. One of these, little more than $1\frac{1}{2}$ inches long, may be a natural production; two are in process of manufacture, having been roughly broken off at the base and laboriously whittled down all over their surfaces (see Fig. 14g); and the fourth, a really finished form, is indicated on the accompanying sketch (Fig. 13). Unfortunately, the specimen itself disappeared from the collection not long after its discovery; but it was symmetrically cone-shaped, about $2\frac{3}{4}$ inches long, and nearly 1 inch across the base. The outer surface was smooth and polished, the rim of the base very neatly cut with a perceptibly curving bevel, and the core hollowed out. The point of the object was partly destroyed through decay, but it appeared to have been only mediumly sharp. On the whole, it seemed a remarkably fine piece of work — rather too large, I should say, for an arrow point, but might no doubt have served as a spear point.

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[1] Mills, (a), 27; (b), 41–42; (c), 51–53; Smith, 182, Pl. XXI, fig. 1–5.

Tubes. The remaining articles of bone consist of two tubes or cut sections of bird bone — Figs. 14f and 14l. The smaller is made presumably from the humerus of a turkey. It is about 3 inches long and shows scarcely any signs of wear. The other specimen, possibly the leg bone of a crane, is about 10 inches long with one end cut off on a slant and the entire surface polished by usage.

OBJECTS OF SHELL.

Spoons or Scrapers. The commonest type of artifact under this heading consists of an entire half-shell of either *Lampsilis recta* or *L. Ligamentinus*, the ventral edge of which has been worn down and straightened by frictional usage (see Figs. 15a–b). The worn part is always on or near the end opposite the hinge, by which it was undoubtedly grasped; and it is of interest to note that all but one in a collection of five are adapted for the right hand. Some difference of opinion exists as to the use of such articles, their service either as knives, scrapers, or spoons having been suggested by previ-

Figure 14. Artifacts of Bone from the Mammoth Cave Vestibule.

a. (20.1–192) Pointed implement of antler.
b. (" –182) Pointed implement of bird bone.
c. (" –155) Chisel-pointed implement of deer ulna.
d. (" –154) Awl of ulna of small mammal, possibly lynx.
e. (" –190) Awl made from splinter of mammal bone.
f. (" –151) Tube or bead made from humerus of turkey (?).
g. (" –152) Arrow point (?) of antler in process of manufacture.
h. (" –175) Chisel-pointed implement made from ulna of young elk.
i. (" –174) Awl made from entire metapodial of deer — probably improvised from a worn-out skin scraper.
j. (" –156) Awl made from split metapodial of deer.
k. (" –184) Slender curved implement of mammal bone — possibly a broken needle.
l. (" –150) Cut and polished section of bird bone, 10 inches long.

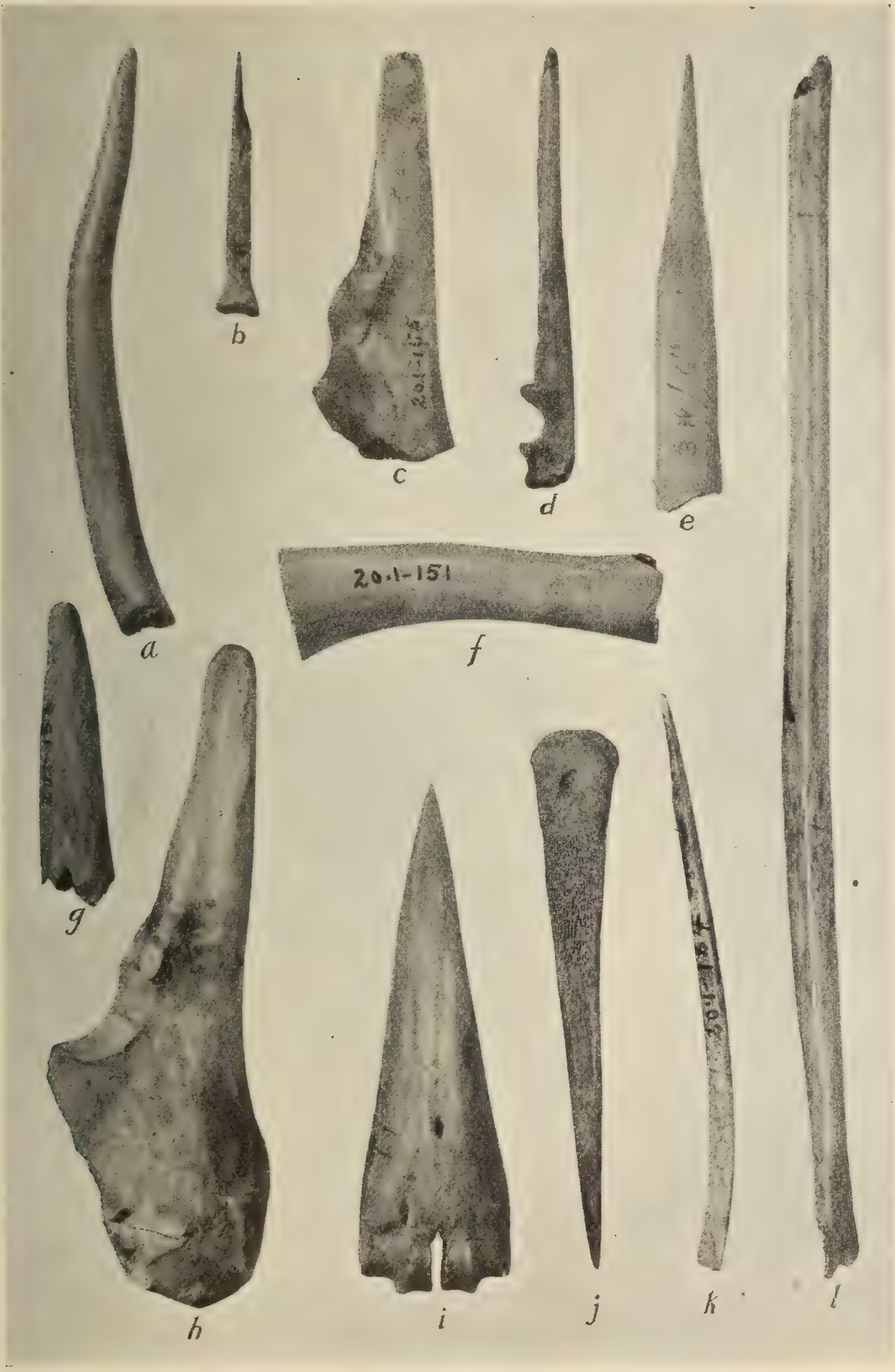

Fig. 14. Artifacts of Bone from the Mammoth Cave Vestibule. $\frac{3}{5}$ Nat. size.

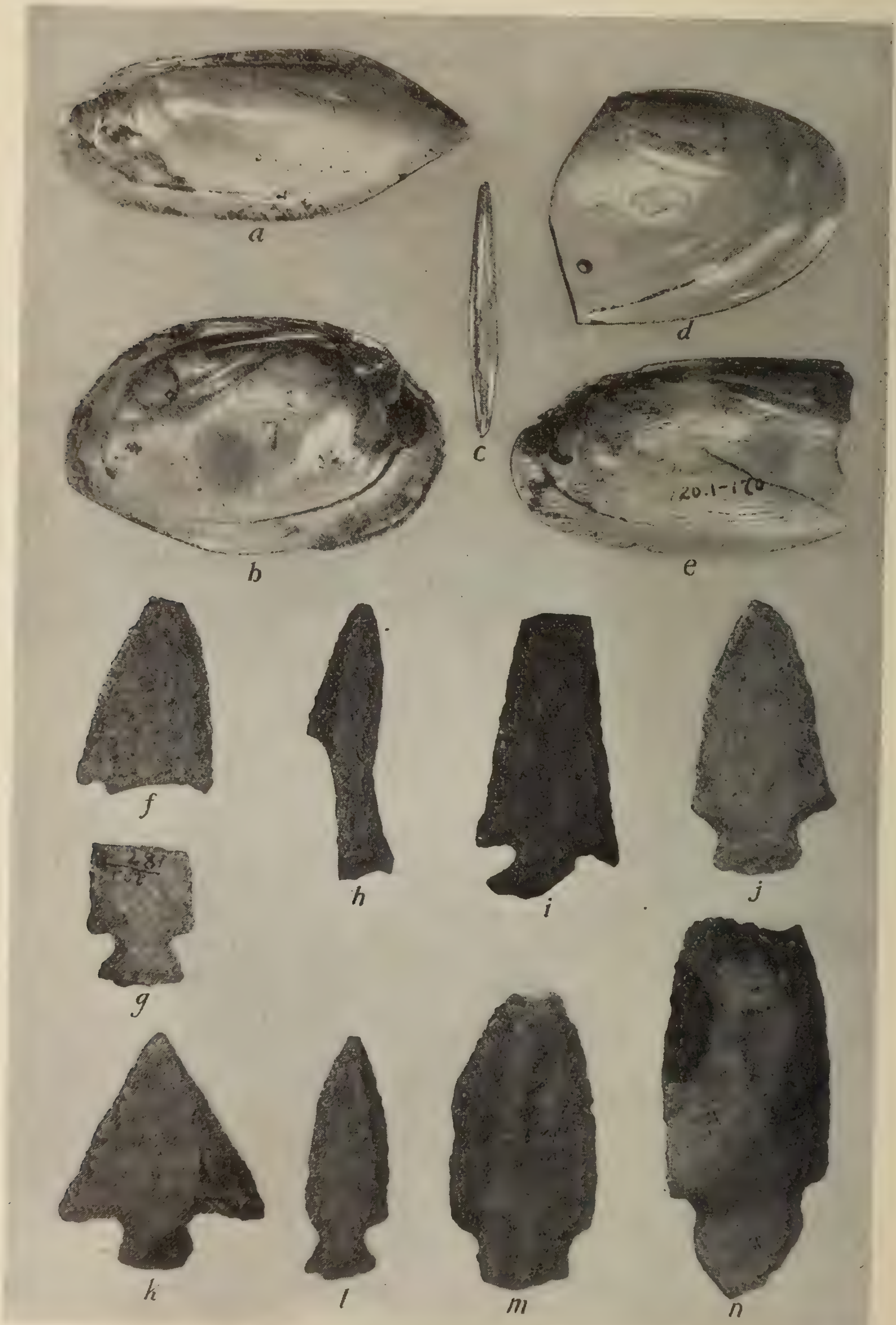

Fig. 15. Artifacts of Shell and Chert from the Mammoth Cave Vestibule. $\frac{3}{5}$ Nat. size.

ous writers.[1] But while the employment of shells as knives and scrapers is a possibility, a study of the present specimens leaves little doubt that they served as spoons exactly after the manner in vogue among the Indians of northwestern California until quite recently, if not at the present day.

Pendants. Figs. 15d–e show two fragmentary bivalve shells (*Lampsilis recta* and *L. ovata*) which have been rubbed down on the outside and afterwards polished on both sides to a fair degree of iridescence. One has a single perforation some distance inside the ventral margin, very neatly executed by drilling from both sides. The other has been twice perforated near the dorsal margin, where, owing to the curvature of the shell, nearly all the drilling had to be done from the outside. The perforations in the latter specimens were studiously placed so that the shell would balance or suspend in a horizontal position and there can be little doubt that the former in its complete state was similarly perforated. Their use as pendants for necklaces, or something of that sort, can hardly be questioned.

Unknown Form. Fig. 15c shows a slender double-pointed object, worked out of the hinge portion of a *Lampsilis* shell. The specimen is two inches long and is suggestive of the substitutes for fishhooks used by the California Indians, but in this case there is no accommodating groove around the middle for attaching the string.

OBJECTS OF STONE.

Chipped Arrow Points, Spear Points, and Knives. In Fig. 15 are shown the entire collection of chipped points found in the Mammoth Cave entrance. As will be noted at once, the forms correspond closely to some of those found on the surface sites around the cave entrances and which are illus-

Figure 15. Artifacts of Shell and Chert from the Mammoth Cave Vestibule.

a. (20.1–180) Spoon of *Lampsilis recta* shell.
b. (" –172) Spoon of *Lampsilis ligamentinus* shell.
c. (" –189) Unknown object of *Lampsilis* shell.
d. (" –169) Pendant of *Lampsilis ovata* shell, polished, perforated, fragmentary.
e. (" –170) Pendant of *Lampsilis recta* shell, rubbed, double perforation, fragmentary.
f. (" –163) Stemmed point of pinkish, jasper-like material; fragmentary.
g. (" –178) Stemmed point of mottled blue-gray chert; point end missing.
h. (" –159) Knife or accidental blade chipped from pinkish gray chert.
i. (" –164) Stemmed point chipped from dark gray chert; fragmentary.
j. (" –196) Stemmed point roughly chipped from an impure light gray chert; complete
k. (" –185) Stemmed triangular point chipped from a fairly pure bluish chert.
l. (" –186) Arrow point roughly chipped from light gray weathered (?) chert.
m. (" –165) Stemmed point of streaked grayish chert; unfinished.
n. (" –179) Stemmed point of streaked grayish chert; roughly finished.

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[1] Mills, (b), 22; (c), 70–71; Smith, 183, 189, 193, Pl. XXII, fig. 6.

trated in Fig. 1. Apart from difference in size, the specimens show only a normal variation in fundamental outline, all but one (?) being of the stemmed type; but the technique exhibited — or rather the degree of finish attained— varies considerably, though seemingly in correspondence with the nature of the material employed. A few of the specimens appear to be made of the type of chert or hornstone found in the interior of the cave and which has already been considered; others, however, are of foreign material of a less pure state, resembling jasper. The particular function of each is perhaps a matter of individual preference; but in all probability there are specimens suitable for each of the purposes suggested in the paragraph heading.

Scrapers. Among the seventy miscellaneous flakes already mentioned as found in the vestibule refuse, there are quite a number provided with straight razor-like edges which may have served as knives or to some slight extent even as scrapers. Only a few, however, show unmistakable signs of usage, the evidence being a minute "retouch" or resharpening by means of secondary chipping of the cutting edge. Fig. 16 is one of these. It is a flake eminently suited for purposes either of cutting or scraping, but it is a fair question whether the fine chipping indicated is the result of design or merely of usage as a scraper. In common with the typical palaeolithic side-scraper (*racloir*), the chipping on these specimens is all — or nearly all — on one side of the flake; but unlike the European forms, it is here sometimes on the concave side, as, for instance, in the given illustration. The sum of the evidence seems to be that this particular specimen was a scraper and that if used in the right hand, as seems certain, it was brought down hard only in the motion or stroke away from the body of the workman.

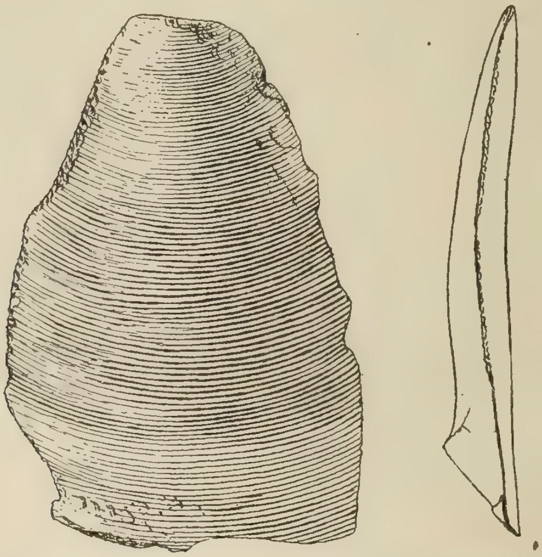

Fig. 16 (20.1–160). Small Side-Scraper from the Mammoth Cave Vestibule. Nat. size.

But if the precise function of the above formless flakes remains doubtful, there can be no question that the accompanying Fig. 17 represents a scraper. It is unfortunately the only specimen of its kind found in the cave débris; although, as we have seen, others approaching it in form were obtained around the entrance to some of the neighboring caverns.[1] Unfortunately, too, the drawings do not quite bring out its salient features. It is a roughly prismatic flake, 3⅛ inches long, 2¼ inches across, and as much as ¾ of an inch thick; but blunt at one end (though not well suited to the hand) and sharp-edged at the other end, having been retouched or chipped on the convex side. Possibly it is only a fragment of the original implement; but in either case it bears a strong resemblance to the European end-scraper or *grattoir*, which was supposedly used after the manner of our modern plane, in contrast to the side-scraper (*racloir*), which could be made to remove shavings with both the forward and backward strokes.

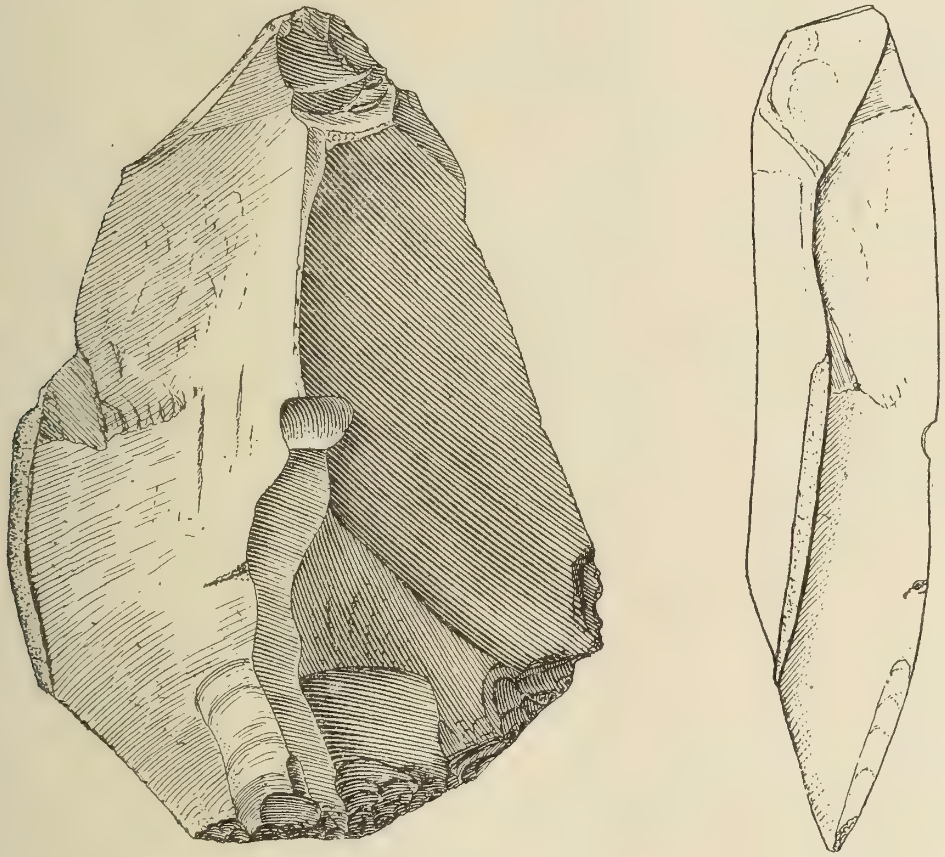

Fig. 17 (20.1–166). End-Scraper from the Mammoth Cave Vestibule. Nat. Size.

Pestles. The remaining stone implements to be described consist of three pestles, illustrated in Fig. 18. All are of limestone, one having been improvised from a slender oblong block and the others purposely shaped by a pecking process, the evidence of which is still visible. Fig. 18c, the improvised specimen is 9 inches long, quite irregular in outline, and has a rounded base or grinding surface as if it had been used in a common mortar. The designed forms, on the other hand, are somewhat symmetrically cone-shaped, with much expanded bases and perfectly flat grinding surfaces. One measures about 5 and the other barely 6 inches in length, and the grinding surfaces — though now much reduced by fractures — originally attained diameters respectively of 3 and 3½ inches. Neither could have served the ordinary mortar, but was designed rather for use on some flat-surfaced anvil rock.

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[1] See p. 18 (Fig. 1 k).

Work had progressed for some time before these specimens turned up and I was almost ready to conclude that the culture stratum in the Mammoth Cave vestibule antedated the discovery of the rubbing and pecking processes. To be sure these are crude specimens, made of rather poor material, but the more elaborate bell-shaped forms are, if not common, yet typical of the Kentucky region and beyond.[1] Just what the presence of the pestles implies I am at a loss to say. "Mortar holes" are said to occur in the surface of the living rock exposures in the Green River country; and, as already stated, corncobs have been found repeatedly in the interiors of the local caves. But if these various suggestions signify that maize was cultivated by the people who inhabited the Mammoth Cave vestibule, then it is extraordinary that no other evidence was found in support of the fact.

ABSENT TRAITS OF CULTURE.

Having now considered in some detail the evidences of aboriginal activities found in the Mammoth Cave vestibule refuse, it seems in order also to mention some of the cultural remains commonly found in Kentucky archaeological stations but which were here absent. Maize has just been suggested as one such item. In a charred state traces of this food staple should have been preserved indefinitely and under the given physical conditions it would seem as if these traces might have kept for a very long time even if not charred. However, no uncarbonized vegetal substance of any sort was discovered.

In the second place, no pottery was found. This is a remarkable fact inasmuch as ceramics are reported as tolerably frequent at least in northern and western Kentucky. We know that pottery occurs in the Green River country because it was found by the writer, as already described, in a rock-shelter only three miles from the Mammoth Cave and we have it cited in

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[1] Young, 105; Moorehead, (c), 98, 102; Fowke, 88.

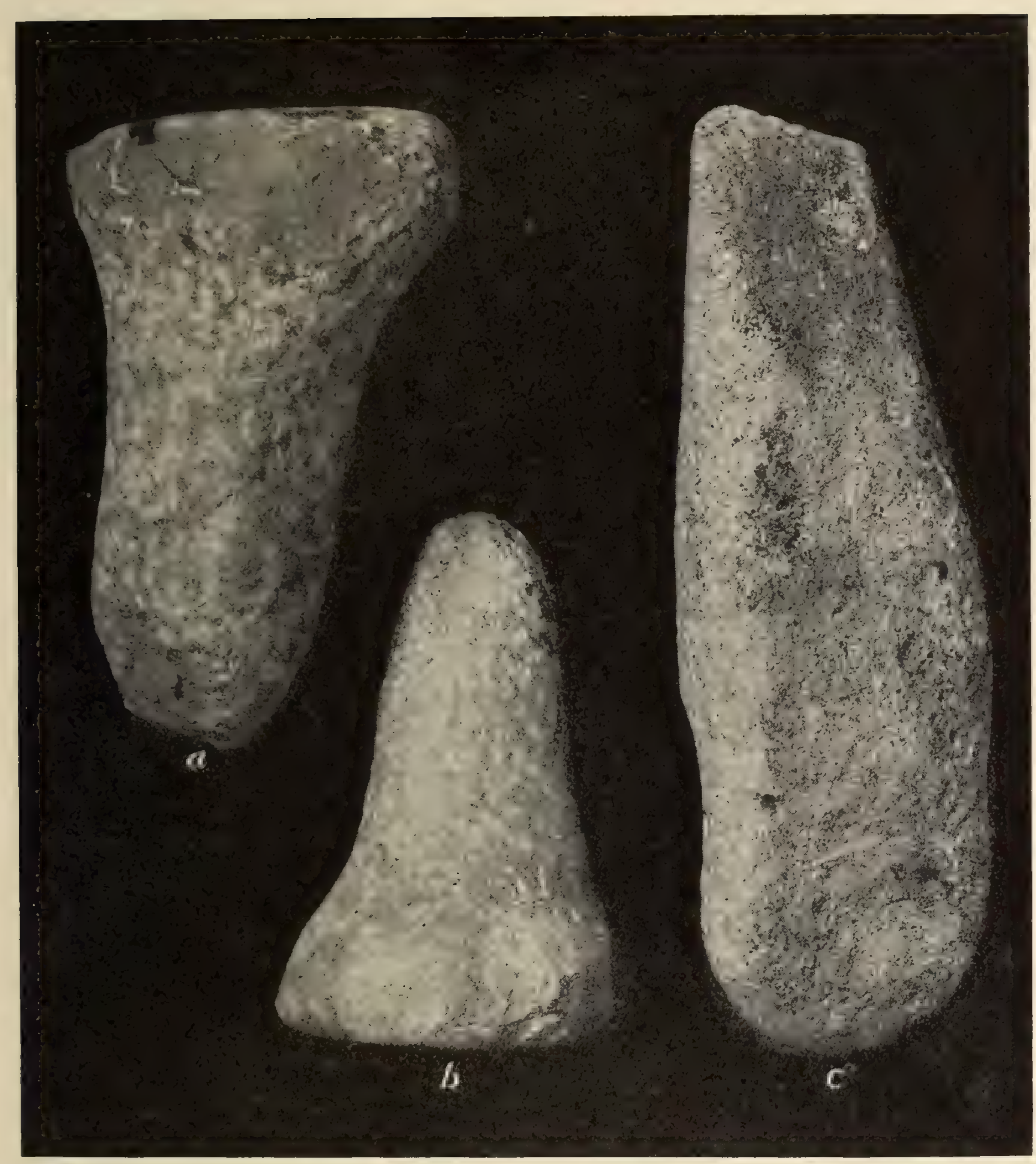

Fig. 18 *a* (20.1–167), *b* (20.1–178), *c* (20.1–168). Pestles from the Mammoth Cave Vestibule. $\frac{3}{7}$ Nat. size.

Col. Young's list of specimens as occurring also in the interior of the Salts Cave. Its absence in the Mammoth Cave vestibule was noted from the beginning and excavations were prolonged beyond the original intentions with a special view to make sure on this point.

In the third place, no stone artifacts of the strictly polished types were found. The two or three pestles mentioned constitute the only specimens exhibiting the so-called purely neolithic workmanship. Celts, pipes, chunkey stones, and all that great variety of problematic forms typical of the mounds and village sites of the general region are absolutely wanting. But, while this is true, it is proper to remark also that so far as the concrete evidence goes, these same artifacts are all but wanting both in the surface sites around the caves and in the interiors of the caves. Col. Young's collection list includes three specimens only from the interiors of the caves, while from the surface sites we have only a few finds reported on hearsay.

In the fourth and last place, objects of copper and other metals were likewise not met with at all, although they occur in mounds and in stone graves throughout that whole section of the Mississippi Basin. But again it should be stated that copper objects have not been reported from the cave interiors.

SUMMARY AND CONCLUSIONS.

The substance of the preceding details concerning the discoveries in the Mammoth Cave entrance vestibule appear to establish:—

1. That the present entrance is of considerable antiquity.

2. That aborigines camped in the vestibule at two different places, leaving débris sufficient to indicate a relatively long period of occupancy.

3. That the shellfish and vertebrate remains found in this débris belong to existing species, though they appear to antedate the coming of the bison.

4. That cannibalism may have been a feature of their life.

5. That the artifacts of bone, stone, and shell, so far as they go, correspond in the main, quite closely to those of the neighboring surface sites and also to those of the mounds and village sites elsewhere in the Ohio Valley, but

6. That all traces of maize growing, pottery making, and the production of polished stone implements characteristic of the Moundbuilder culture as a whole are entirely absent.

It might be urged that 545 cubic feet, more or less, is a small quantity of débris to have handled. Still, taking into consideration the range of the test pits, the amount of work done seems sufficient on which to establish at least a tentative conclusion. Again, it might be said that the apparent outcome is accidental; but in view of essentially similar discoveries in the Jacobs Cavern [1] of Missouri, in the Naaman Creek Rock-shelter [2] of Delaware, and also in a whole series of rock-shelters in upper New Jersey [3] and lower New York states,[4] it seems to the writer far more than probable that the facts related about the Mammoth Cave vestibule settlement are exactly what they seem. That is, we have here evidence of a type of culture very similar to that of the Stone-grave and Mound-building tribes, but much more limited in its scope of development; in other words, essentially more primitive. The primitive group lived off the natural products of the land and the advanced group gained subsistence mainly through the practice of agriculture. Whatever the racial connections may be, the cultural relations are plain enough: the Mammoth Cave vestibule culture antedated and in a measure at least gave rise to the culture of the Moundbuilders.

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[1] Peabody and Moorehead, 24, 27.

[2] Cresson, 147.

[3] Schrabisch, 153, 165.

[4] Harrington, 130.

This conclusion, it may be remarked in closing, is in no sense at variance with what we already know. Professor Mills, for instance, after many years of mound investigation in the Ohio Valley has only recently announced the determination of *lower* and *upper* stages to his so-called Hopewell culture.[1]

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[1] Mills, (h), 266.

GENERAL CONCLUSIONS.

Detailed conclusions have been stated at the end of each of the special divisions of the Green River archaeology herein treated and it is deemed needless repetition to cover the ground again. Altogether, we have considered data from four different sources, namely: (1) surface sites adjoining several well-known cave entrances, (2) the interiors of these and other caves, (3) the entrance vestibule to the Mammoth Cave, and (4) one small rock-shelter. We reached the conclusions that the surface sites are probably workshops where the chert, quarried in the respectively adjacent caverns, was fashioned into implements; but that the specimens themselves, while exhibiting both common and uncommon traits, cannot be dated as they may range over the whole period of aboriginal time. We found the remains from the rock-shelter and from the cave interiors (the latter being the accumulation of a whole century of collecting activity) both to be identical in nature with remains reported from the stone graves and the earthmounds of the entire east-central portion of the Mississippi Basin; and to be in all probability of relatively modern, though perhaps prehistoric date. Finally, we came to the conclusion that we have discovered in the Mammoth Cave vestibule a closely related but earlier and more primitive stratum of culture; but which, nevertheless, in view of the associated modern fauna, cannot be looked upon as particularly ancient.

In conclusion, then, so far as the antiquity of man in America is concerned, nothing essentially new or important has been added to what we already know from other caves, from the Trenton deposits, and from the Florida shellmounds. Omitting the Trenton station as perhaps debatable, we find conditions everywhere else in this substratum of culture to be about the same. On the one hand, there is the absence of pottery and of maize as well as of the advanced polished stone technique; and on the other hand, there is the continued presence of the historic fauna. We may be dealing with cultural developments stretching over some thousands of years but certainly not with anything reaching back anywhere near to glacial times.

But while we may be frankly skeptical about discovering anything more ancient or primitive in eastern North America than that which we already possess, it does seem highly desirable to continue cave investigation in Kentucky and elsewhere until we find our successive culture stages in actual superposed contact.

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ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

VOL. XXII, PART II

CHRONOLOGY IN FLORIDA.

BY

N. C. NELSON

NEW YORK
PUBLISHED BY ORDER OF THE TRUSTEES
1918

CHRONOLOGY IN FLORIDA.

By N. C. Nelson.

INTRODUCTION.

The following brief paper concerns chiefly a large shellmound situated, until recently, on the mainland bank of the Indian River at Oak Hill, Florida. It is a report based upon only a few days' single-handed work, resulting in but a very small collection, and as such lays claim neither to completeness nor to entire accuracy of details, but insists merely on a few important general conclusions with reference to local chronology.

Physiographic conditions of the Gulf Coast region, and particularly of the State of Florida, have from times presumably long prior to the advent of man been exceedingly favorable to molluscan forms of life; and this fact of an abundant and easily secured food supply appears to have outweighed the concomitant scarcity of other important natural resources and to have attracted early aborigines on a large scale. The evidence of this is an immense number of refuse shell-heaps, often of enormous proportions, piled up along both the fresh and salt water shores, such as the St. Johns and Ocklawaha rivers with their lacustral expansions of the interior, the Indian River on the Atlantic Coast and, for example, Tampa Bay on the Gulf Coast. The presence and significance of these mounds have long been recognized, at least by the scientific world; and they have been subject to repeated investigations by such well-known men as Brinton, Cushing, Wyman, and Moore, until it seems questionable whether further work short of prolonged systematic study can reveal to us anything new about them. Nevertheless, when Dr. E. H. Sellards, State Geologist in Tallahassee, wrote the American Museum about the middle of April, 1917, that a certain large shellmound was being rapidly removed for road-building purposes and that it afforded conditions suitable for stratigraphic observations, it seemed an opportunity not to be neglected. Accordingly, I visited Florida, inspecting among other things of antiquarian interest, a group of artificial sandmounds on the shore of Lake Jackson near Tallahassee, also the now much-discussed archaeological station at Vero on the peninsular east coast, and lastly, quite a number of shellmounds, as well as sandmounds, between that point and St. Augustine, devoting finally three days to a special study of what remained of one such mound at Oak Hill. The results appear not to be entirely new; but as they were obtained independently, while in the possession of only a hazy and fading second-hand notion of prior determinations, they seem worth placing on record.

N. C. NELSON.

May, 1918.

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SITUATION OF THE OAK HILL SHELLMOUND.

The shellmound site in question is located about one mile due east of Oak Hill station, directly on the bank of that part of the Indian River known as Mosquito Lagoon.[1] The so-called river owes its lagoon-like appearance mainly to the absence of islands which ordinarily crowd the broad channel separating the mainland and the sand-covered reef marking the present ocean shore, some four miles away. The spot will be recognizable for a long time to come owing partly to the fact that the shell material extends in places to a considerable depth below the ground water level and therefore could not be entirely removed. Specifically stated, the refuse deposit is situated on the southern extremity of a low and narrow sand bar, perhaps nine hundred yards long. A smaller shell-heap,[2] surmounted by a house and grove, marks the northern end of the same bar. This sand bar, it may be explained, is separated from the mainland jungle by a marsh belt about 150 yards wide. A powerful spring rises immediately off the land-side base of the mound and may possibly have had something to do with the choice of location although the water at the present time, besides being sulphurous, is decidedly salty and unfit for use. A few steps to the northwest of this spring is another smaller accumulation of shell and refuse measuring some 50 by 75 feet on the horizontal and about 10 feet in height. Some digging has been done in it and current reports are that human remains and artifacts are commonly found here. Possibly it is the burial place belonging to the settlement, although the composition does not differ noticeably from that of the main mound.

The recent history of the Oak Hill shellmound is in part suggested by the various local names applied to it, such as Sheldon Mound, Sam's Mound, and Hotel Hill. It appears to have been levelled somewhat and to have been subject to cultivation at a relatively remote historical date; in fact it was said at one time to have supported a valuable orange grove.[3] Whether this is true or not, the mound did within the memory of people now living serve as the site of a conspicuous hotel, visible for miles up and down the river. No actual ruins remain to prove this; but bits of glass, iron, porcelain, etc., were sufficiently evident in the upper two feet of the mound material to corroborate the tradition.

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[1] The site is indicated as "No. 2" on a map of the local shellmound distribution recently published by Amos W. Butler. See bibliography.

The mound was apparently observed by William Bartram about 1774 and again shortly prior to 1884 by Andrew E. Douglas, the donor of the American Museum's type collection of North American stone implements. See Bartram, 519, and Douglas, 79.

[2] No. 3 on the Butler map.

[3] Orange groves, according to early travelers, as well as recent investigators, are commonly met with on the shell-heaps in the interior of Florida. These groves, long neglected and essentially "wild," resulted presumably from seeds of European origin either accidentally scattered or deliberately planted by the aborigines in early historic times, the fruit being apparently more or less sour perhaps in proportion to the degree of reversion. See Bartram, 97, 101, 138, etc.; Wyman, (b), 10; Moore, (a), 1894, 16.

General Description.

On arriving at Oak Hill, only about one-seventh of the original shellmound remained. Two steam shovels had been at work for four months and nearly two thousand carloads of shell had already gone out. However, the apparent basal perimeter of the refuse heap was easily made out and the accompanying groundplan (Fig. 1) will give an approximately correct idea of the size, shape, and orientation of the great accumulation. The small triangular portion of the mound still undisturbed ranged from the fairly constant ground water line up to a height of eighteen feet; and within the limits of this eighteen foot contour, on the north exposure, i. e., at the point marked X on Fig. 1 and on the A-B section of Fig. 5, the shell refuse extended fully four feet below the same water level with every indication of deepening in the seaward direction. On the other hand, it obviously rose in the landward direction as was proved by excavations at points Y and Z, as well as by the actual appearance of the sand bottom above the ground water line a little farther to the west. In other words, stating the case in rough terms, about one-third of the land-side portion of the mound material rested on the high median portion of the sand bar, possibly as much as a foot and a half above the ground water line, while the remaining two-thirds of the mound lay on the seaward slope of the bar, attaining progressively greater and greater depth from center to perimeter. The general facts of the situation are exhibited in the A-B section of Fig. 5.

If now we assume an approximate stability of the sea level throughout the human period and also assume that the mound accumulation was begun on dry land with only gradual growth in a seaward direction, then I did not see the original core, i. e., the oldest portion of the deposit. This of course was most unfortunate, as it leaves the stratigraphic observations somewhat incomplete.

Internal Structure.

That the oldest portion of the Oak Hill shellmound had been removed already prior to my arrival will be made tolerably evident by an examination of either the accompanying sketches of the A-B and C-D sections (Fig.

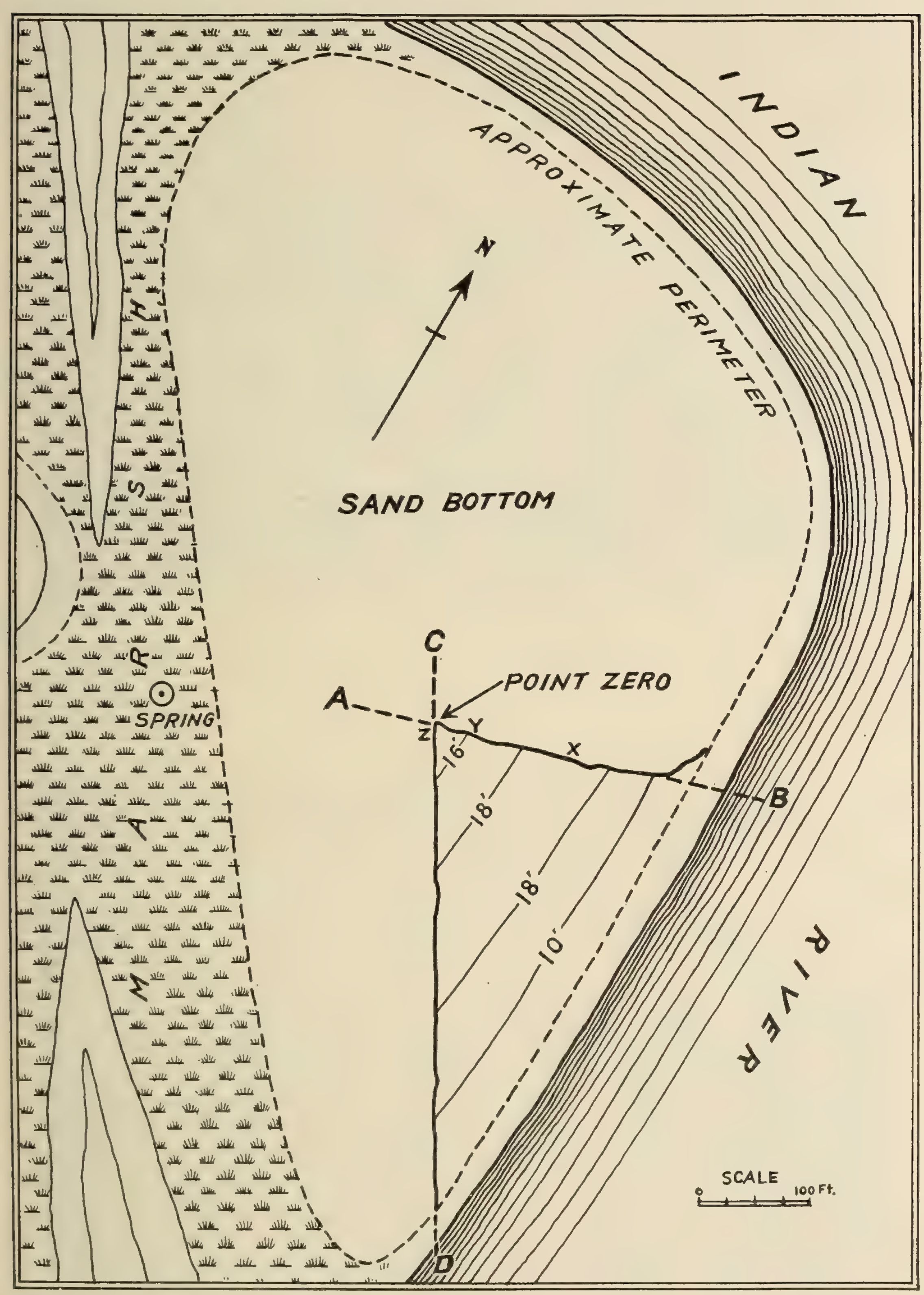

Fig. 1. Groundplan of the Oak Hill Shellmound.

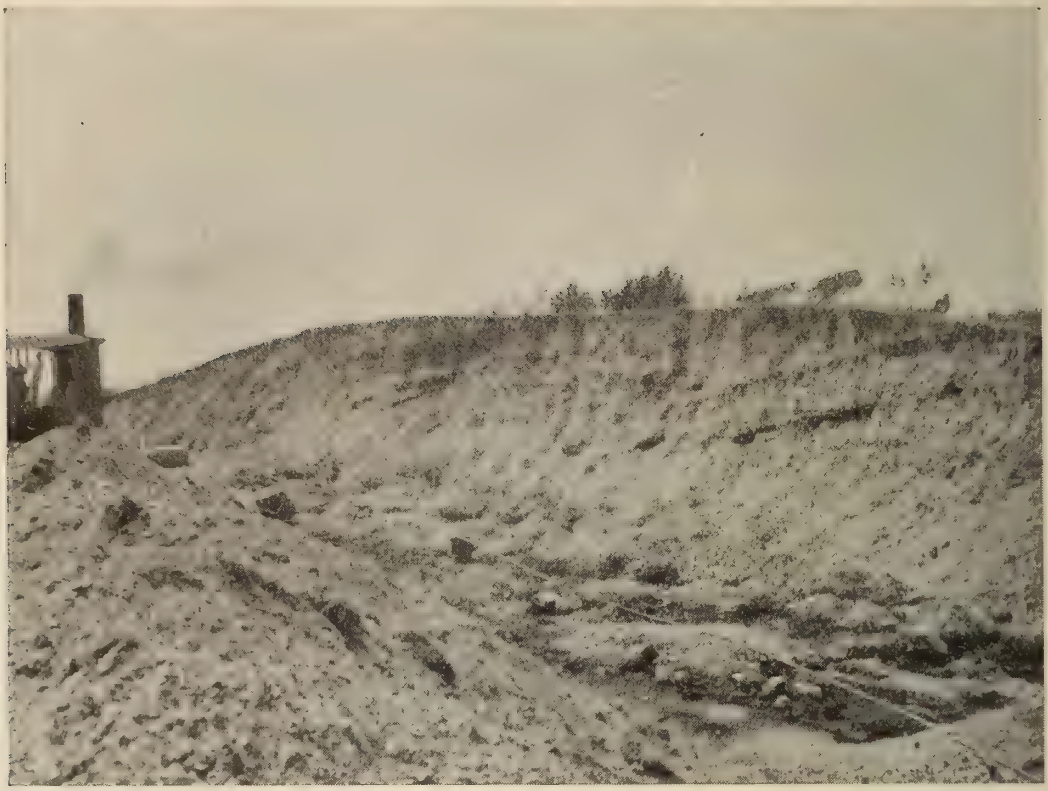

Fig. 2. Nearly Complete View of the North Exposure or A–B Section of the Oak Hill Shellmound.

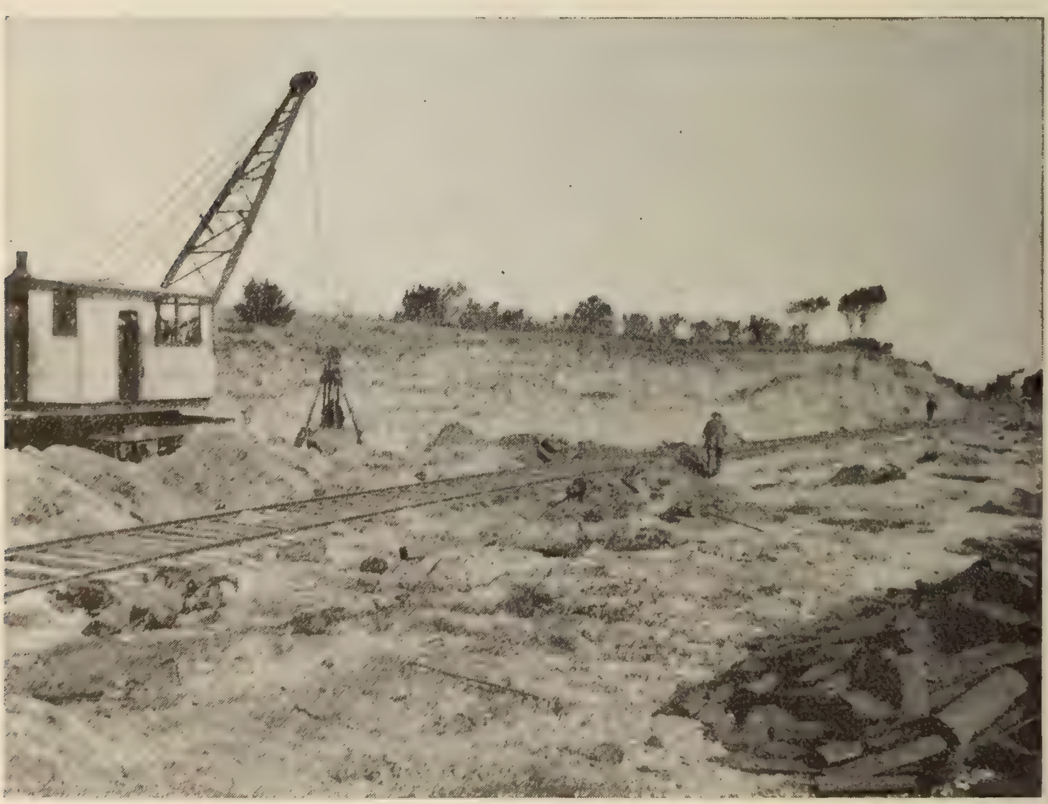

Fig. 3. Partial View of the West Exposure or C-D Section of the Oak Hill Shellmound.

5) or of the partial photographs of the same exposures. The plainly visible dark seams or strata, both in the transverse and the longitudinal section, all dip from the central end of the exposures towards the perimeter. This fact is best shown in the photograph of the transverse A-B section (Fig. 2) where two well-defined black layers are seen to begin at the top of the mound in the upper right hand corner and to reach the base level only about one hundred feet away, where they dip beneath the water level. The longitudinal C-D section (Fig. 3) is not quite so simple and regular, but the appended sketch-plan may be relied upon to show the essential features which tell a story of growth quite in accord with that of the companion section. Photographic illustrations of detail portions of the sections might also be submitted to show that the minor bedding planes of any and all parts of the composition conform entirely to the conspicuously outstanding stratigraphy.

These distinctive structural features, it will readily be perceived, are elements of the first importance as regards both the estimation of the period of time involved in the accumulation of the mound material and also the determination of the relative antiquity of the artifacts found in it. Comparatively speaking, the Florida shellmounds give the impression of having grown rather rapidly. Animal bones and artifacts — excepting pottery, perhaps — are notably infrequent and the same is true to a lesser degree of ashes and associable evidences of permanent settlement. In other words, by far the greater portion of the mound material is made up of absolutely clear shells, dumped out on a grand scale after having been emptied of their edible contents. Referring to the Oak Hill mound, the deposition of shell refuse was so rapid in places that there was no time for sand to blow into it or for disintegration to take place allowing vegetation to get a foothold. But a closer examination showed here and there distinct lenticular beds of calcined shells or of clear ashes and additional fine-grained refuse other than shells. These special deposits doubtless marked points of temporarily arrested accumulation of shell débris and were, besides, the repositories of most of the artifacts found in the mound. Protracted investigation of such fireside deposits would probably have revealed that many of them were actual house sites, suggesting that while the inhabitants lived on these spots shell refuse was thrown elsewhere. But in time, the houses were moved or fell into disuse and gradually the hollows marking their locations were covered up; and so the mound grew by addition, now here and now there.[1]

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[1] An interesting illustrated sketch of probable shellmound growth on the Florida west coast is given by Walker, 1879, 414–418.

The visibly extended black strata of nearly uniform thickness (See Fig. 2) are of a somewhat different nature. They were given no very special attention, but it is hardly to be questioned that they represent for the most part long periods of arrest in the growth of the mound during which the black matrix was formed partly by disintegration and partly by vegetal deposition, precisely as is taking place at the present surface of this and other mounds. So while the first impression regarding the relative rapidity with which these shellmounds have accumulated still holds, the closer examination cannot fail to emphasize the idea that the mounds may after all lay claim to a really respectable antiquity. Incidentally, it may be in place to remark that many of the Florida shellmounds not far from this one have been abandoned long enough to allow the growth of trees upon them estimated to be over six hundred years old.[1]

The suggested relation of the stratigraphy to the age of the imbedded artifacts need hardly be dwelt upon. In ordinary geological formations of a stratified nature a given fossil specimen — barring accidental intrusions — is accepted as being at least as old as the formation itself; and under certain conditions depth is an index to age. The same rule is to be observed in shellmound investigation. But unless we take strict account of the order of deposition, the depth at which a given artifact occurs may signify little or nothing. Thus, to illustrate from the A-B section of the present mound, the fragments of pottery found in the bottom at point X,— i. e., twenty-two feet below the mound surface and four feet below the water level — were in reality no older than other sherds found on top of the mound at point Z.

SHELLMOUND COMPOSITION.

The composition of the Oak Hill shellmound cannot be given except in very general terms. No effort was made at exact determinations although deliberate attention was given to the subject. Roughly stated, then, probably all of eighty-five percent of the material in the mound was shell. Of the remainder considerably over fourteen percent was made up of ashes, charcoal, sand, rock, and other mineral substances; while the balance, less than one percent, would suffice for the volume of fish and animal bones.

Shell Remains. Referring to the molluscan remains alone, it cannot be far from the truth to state that about ninety percent of the whole mass was made up of oyster shells with perhaps five percent of clam shells and one half of one percent, more or less, of additional species to complete the total volume. The shell collection brought home (Cat. No. 20.1–225) includes at least all the more obvious forms and it has been identified by Curator L. P. Gratacap as follows:—

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[1] Wyman, (b), 81–85.

1. Common oyster (*Ostrea virginica,* Gmelin)
2. Common hard shell clam (*Venus mercenaria,* Linn.)
3. The heavy ark shell (*Arca ponderosa,* Say)
4. Cockle shell (*Cardium muricatum,* Linn.)
5. Large cockle shell (*Cardium magnum,* Born)
6. Cross-barred Venus shell (*Chione cancellatum,* Linn.)
7. Wedge shell (*Donax denticulatus,* Linn.)
8. Tulip band shell (*Fasciolaria tulipa* Linn.)
9. (*Fasciolaria distans,* Lamm)
10. Pear conch (*Fulgur pyrun,* Dillwyn)
11. Short razor shell (*Tagelus gibbus,* Speng)
12. Plaited horse mussel (*Modiola plicatula,* Lamm)

For the sake of completeness there might be added to the list one or more species of crab (not determined) and also isolated finds of *Fulgur perversa,* Linn.; *Oliva litterata,* Lamm; and *Ampularia hopetonensis,* Say (fresh water). The mere naming of these invertebrates must suffice in the present case. Perhaps instructive results might have been obtained by investigating their relative frequency in different levels of the mound; but this was not done chiefly because the possible variation was not immediately obvious. One could not fail to observe that, e. g., *Venus mercenaria* and *Donax denticulatus* occurred generally in special pockets and minor intercalated strata; but a closer examination revealed that the former of these and at least most of the other species were represented from top to bottom of the refuse. Moreover, Curator Gratacap assures me that the cited forms are all representative of living species.[1]

Mineral Substances. In addition to ashes and charcoal, there may be mentioned such occasional items as smooth pebbles of undetermined rocks and also fractured chunks of limestone. But objects of this nature, inasmuch as they form no part of the local environment, are naturally infrequent. Of interest, perhaps, was a workman's detailed description of what would seem to have been a lump of ambergris, found and disposed of before my arrival. Intercalated strata of what was probably wind-blown sand were not so noticeable here as in neighboring shellmounds, but traces occurred. In the lower three feet of débris nearest the mound center, a great deal of sticky mud or clay adhered to the outside of the shells, which were in addition somewhat cemented together. A thin film of mud had also been deposited on the inside of the same shells, presumably through the action of the extra high tide waters rising and falling through the mass, as indeed there were evidences of wave action elsewhere in the débris at points four to six feet above the present ground water level. The presence of the mud on the outside of the shells may possibly signify that the early mollusc-gatherers did not take the trouble to wash their bivalves before opening them.

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[1] The cited literature appears to give no similar lists of the Florida coast shell species suitable for comparison; and the isolated references that occur are mostly to those forms only which happen to have been used for artifacts.

Vegetal Substances. Under this heading nothing in the way of agricultural products such as corn, beans, and the like, was observed. In all probability, they were not present. The only possible remains of food substances were a small collection of what appears to be charred palm berries (20.1–227) such as may still be seen on the common cabbage palm growing in the vicinity, and which I was told are sometimes eaten even at the present day. The occurrences were recorded in both sections, the sample brought away being taken from the west face, 245 feet from zero and nine feet below the surface.

Animal Bones. Osseous vertebrate remains (Cat. No. 20.1–226) were comparatively scarce in the mound composition. This was to be expected because the aborigines who accepted the conditions of Florida seacoast life evidently came primarily for molluscs. Fish remains, in the form of bones and scales, were by far the most plentiful, commonly occurring in pockets or in isolated seams of the shell matrix, as if the waste of great catches had been disposed of at once. Among the few bones of the collection Assistant Curator John T. Nichols has identified a shark and a catfish. Occasional bird bones of medium and large sizes were found, but they have not been identified. The remaining bones, according to Dr. F. A. Lucas, include a whale, one or two turtles, a deer, and the black bear, *Ursus floridanus*.[1]

Human Bones. No evidences of human burials were observed; and the intelligent workmen engaged in removing the mound material were unanimous in reporting that none had been found prior to my arrival. Human bones were present, however, as I found myself a section of an adult humerus (20.1–226) about six feet below the surface in the north exposure. It was a matter of common report also that there was discovered in the mound some years ago a single skull remarkable for the fact that a bone arrow point was fastened in the eye socket.

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[1] Wyman, (a), 457 and (b), 78, gives a partially determined list of the local shellmound fauna including a bear, raccoon, hare, deer, otter, opossum, turkey, birds (undetermined), alligator, hard-shelled turtle, soft-shelled turtle, box turtle, gopher, catfish, gar-pike, whiting, and other fishes not determined. These forms were more or less common to practically all the mounds investigated by him on the St. Johns River a few miles to the west and northwest of Oak Hill. Moore, here and there in his extensive publications covering the same field, verifies Wyman's determination and in (a), 1894, 23, adds a dog and a lynx to the list. Several species such as the beaver, the bison, etc., though historically at home in Florida have seemingly not been recovered from the shell-heaps in identifiable form.

All the above vertebrates, it will be observed, are modern species, but Wyman, (b), 81, cites the occurrence, in four widely separated mound deposits of fragments of extinct fossil forms such as a horse, an ox, a mastodon, an elephant, etc., all of which he expressly recognizes as intrusive, i. e., as not properly to be regarded as contemporary with the list of species above cited.

ARTIFACTS.

According to practically all accounts, the Florida shellmounds, unless actually used for burial purposes, contain few articles of human manufacture such as tools, weapons, and ornaments. Several explanations might be offered for this state of affairs. Thus, if our observation is correct that the shell refuse accumulated at a comparatively rapid rate, we should expect proportionately fewer artifacts. But while this is probably a real factor in the case, the environmental conditions are also to be considered. No rocks suitable either for hammering or cutting tools are present in the country. If the shellmound people lived permanently on these sites instead of coming to them seasonally from the interior piedmont region where rock could be obtained, they would have had to barter for some of these necessities and for the rest make substitutes of shell, as was done in the Pacific Islands. It is conceivable that a mere clam digger might have gotten along with very little in the way of weapons and utensils, but there is no reason for regarding the early Florida native as having lived on such a low plane. He used fire from the beginning; he managed somehow to take both fish and game; and he made pottery, which if not particularly ornamental, was of good and serviceable quality.

The Oak Hill mound appears to have formed no exception to the rule, so far as artifacts are concerned, unless we except broken pottery. To be sure, the negative verbal reports of workmen who have handled the mound material with steam shovels is of doubtful value. Nevertheless, it agreed with my own observations, which it must be admitted involved little more than a fairly thorough inspection of the two illustrated exposures, amounting to some three thousand square feet. At a few points only, nearest the center of the mound, was any actual digging done, and that in the practically sterile lowest horizon of the refuse. Besides, there were small areas in the upper horizons which could not be satisfactorily examined owing to the danger of caving. The results of picking the surface of the two exposures may be grouped as follows:—

Bone Objects. The only artifact under this heading taken out in my presence was a worked deer antler found in the bottom of the mound at point X on the north exposure. A well-defined groove had been cut around one of the secondary prongs about three inches from the tip, for some such purpose as a spear point. The specimen forms no part of the collection because the finder was unwilling to part with it. Another authentic find was a fine dagger-like object of hollow bone, about twelve inches long and now preserved in the collection of Miss Zelia Wilson of New Smyrna.[1] Finally, we may mention again the "bone arrow point" found inserted in the skull referred to in the preceding section.

Shell Objects. Only three pendant-like objects were recovered and two of these are even doubtful. The two uncertain specimens are perforated *Arca* shells, one (20.1–222) found near the top and the other (20.1–223) near the bottom of the mound. The perforation has been made by removing the small cone projecting back of the hinge; but whether it is of artificial origin or not, there is no appreciable wear on either object.[2] The third specimen (20.1–221) is a flat oblong form cut out of a *Fulgar* shell and notched at one end for attachment (See Fig. 4). This object was found lying under an inverted earthenware food bowl to be described later, and the idea that it may have been used for opening bivalves is at least conceivable.

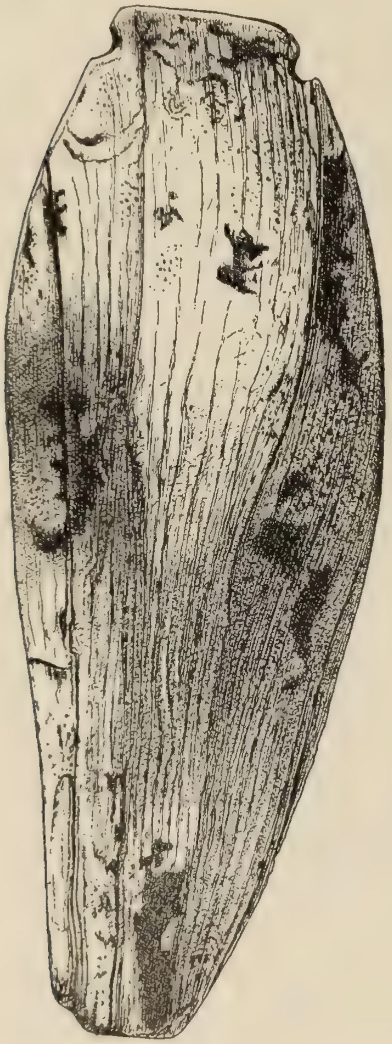

Fig. 4 (20.1–221). Pendant of Shell, found with Fig. 6.

Stone Objects. A thin artificially smoothened fragment of rock (20.1–224), resembling quartzite, less than two inches square, is all that the collection affords under this heading. This specimen was found in company with the preceding oblong shell pendant underneath a broken bowl at a point in the west section 150 feet south of the center and nine feet deep.

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[1] The specimen is somewhat suggestive of the one figured by Moore, (b), X, 59, though neither perforated nor made of human bone.

[2] Cushing and Moore both found this type of perforated shell in considerable numbers on the west coast of Florida, and both regard them as artifacts employed for different purposes such as tools and net-sinkers. See Moore, (b), XIII, 470, for illustrations and text.

Ceramic Objects. Of the data gathered at Oak Hill, the earthenware or pottery alone seems to possess any really appreciable scientific value. Pottery of one sort or another was found at all levels in the mound except in the lower two feet or so nearest the original core of the deposit. Whether it was positively absent here cannot safely be affirmed on the basis of the small amount of work done, but the probabilities are strong in view of the repeated findings of Moore and Wyman in the St. Johns River shell-heaps.[1] Moreover, personal examination of an exposed twenty-five foot section through the Port Orange shellmound (No. 20 on the Butler map) some twenty miles to the north of Oak Hill, revealed pottery in the upper fifteen feet, but none in the lower ten feet. In other words, the range of evidence seems conclusively to show that the earliest stage of shellmound culture in east-central Florida was devoid of ceramics; and it is hardly to be doubted that the fact could have been fully proved by the present Oak Hill mound if it had been studied a few weeks earlier.

The ceramic specimens found projecting from the solid vertical walls of the two shell exposures, beginning at the angle of junction and ending at the ten foot contour, include both isolated sherds and several more or less complete, though crushed, vessels. One such vessel referred to in connection with the notched shell pendant was found in an inverted position in the west exposure 150 feet from the center and nine feet deep. Another and similarly inverted bowl, perhaps two-thirds complete, was located in the same exposure at ninety-five feet from the center and fifteen feet below the surface. Several less complete vessels were obtained elsewhere, some with drilled perforations, showing that the customary way of mending by tying the pieces together with cords was in use here also. Only a representative fragment of each of the noticeably incomplete specimens was taken and these were placed with the isolated sherds to be considered presently.

The one practically complete vessel brought home (20.1–218), on being mended, turns out to be an ordinary bowl, presumably used for food, but not to any appreciable extent for actual cooking. The specimen is indicated in Fig. 6 and may be roughly described as hemispherical, though the bottom is considerably flattened and the plain rim drawn in. Its inside dimensions are: height, 5¾ inches; extreme body diameter, 11½ inches; and rim diameter, 10½ inches. The wall thickness averages ¼ of an inch. A heavy buff-colored clay wash or slip has been applied to the inside of the vessel, but not to the outside, which latter shows a crackled surface as if the paste had not been thoroughly kneaded. The two surfaces of the vessel have been very roughly smoothened by scraping and rubbing with a small tool, leaving marks from one to three-sixteenths of an inch wide. The paste is an even dark gray or slaty color, fairly hard and well knitted, but at the same time slightly porous and seemingly stringy or laminated. Of tempering material, there appears to be at least a trace of finely ground shell.[1]

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[1] See e. g. Wyman, (b). 53, 55, and Moore, (a), 1892, 916; 1894, 26; (b), X. 48, 102, 103, 209.

Vertical Sequence of Pottery Types.

We come finally to the miscellaneous potsherds of which the collection contains 190 examples. The given figure represents by no means the total number of pottery fragments found, but instead merely so many localities in the two sections at which one or more specimens occurred. The list falls into two groups or classes, namely, plain ware and ornamented ware. To the class designated plain ware belong 113 sherds (20.1–219) taken from all levels of the exposures (excepting the lower two feet nearest the mound center), though they are most abundant in the middle and lower portions of the mound. The remaining 77 sherds, belonging to the ornamented class (20.1–220) were taken exclusively from the upper level of the refuse. Tables might have been constructed to show the exact distribution of the individual fragments; but, as previously intimated, the investigation was not sufficiently complete to warrant this, and the essential facts of the case have been approximately indicated on the two sectional sketch plans (Fig. 5). The broken lines crossing the upper and outer face of each of the two exposures connect the deepest occurrences in the refuse of ornamented ware; and while the general trend of these lines need not be taken as more than approximately correct, they will be observed to be in close agreement with the stratigraphy. The probable absence of pottery in the original core of the mound has also been indicated at the base of the center ends of each of the two sections.

This general fact of ceramic stratification, coupled with the total absence of pottery in the lower mound horizons, is of first importance and as such has been more or less evident to several prior investigators. Thus Wyman,[2] fifty years ago, clearly inferred that something of the sort was true

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[1] This vessel and in fact most of the fragments to be described later on seem to agree quite closely in regard to paste composition as well as to form and appearance with the characterization of one of the local earthenware types as made out long ago by other investigators. Thus Wyman, (b), 55, refers to the St. Johns River pottery as being generally "made of pure clay"; and Holmes, (a), 111, also (b), 117, recognizes in the same area what he calls a "chalky ware," or a pottery having a paste "exceptionally free from tempering ingredients."

[2] Wyman, (b), 53, 55.

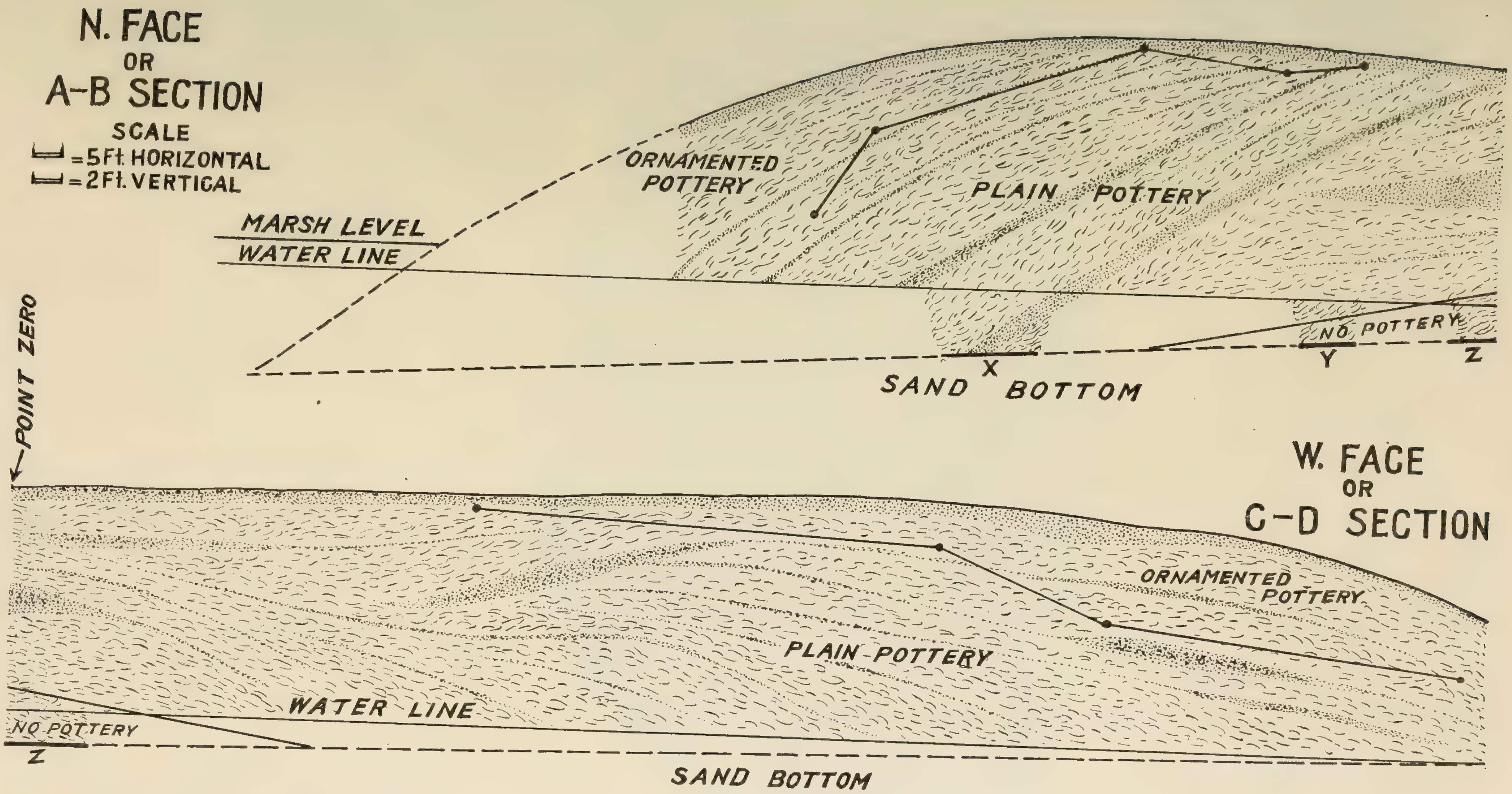

Fig. 5. Sectional Sketch Plans of the Oak Hill Shellmound showing the Stratigraphic Occurrence of Different Types of Pottery.

for the St. Johns area, though he did not demonstrate it. Moore,[1] on the other hand, states positively for the same area that ornamented potsherds occur often only on the surface or in the upper levels of certain mounds. Walker,[2] in 1881, published an actual section showing ceramic stratification in a mound near Cedar Keys on the Gulf Coast and Holmes,[3] in treating of the technical aspects of Florida pottery, has in various papers not only accepted these field observations, but has gone to the extent of recognizing several localized variations of decorated pottery some of which he either tacitly or expressly regards as of different relative ages.

Plain Ware. This division of the data has in a measure been described already in connection with the preceding bowl. But as the material is not of an entirely uniform nature a few additional remarks are necessary. So far as can be judged, the sherds all represent bowls or wide-mouthed pots of about the same simple form and size as the one described,[4] the only exception being Cat. No. 20.1–217, a fragmentary vessel with a flat circular bottom. Many fragments are encrusted with soot, usually on the outside, but occasionally on the inside as well. The general surface finish is about on a par with the bowl though there are some fragments of exceptionally thin and smoothly rubbed ware, mostly from the upper levels of the mound. Unfortunately, not a single piece gives a clear hint of how it was built up, whether by coiling or otherwise. The paste also conforms pretty generally to that of the bowl and one is under the impression that it was not fired quite sufficiently. Often, however, the typically chalky dark gray section is encased in red, and occasionally the section is brick red clear through. Tempering material is difficult to detect in most instances. Shell, if used at all, must have been very finely crushed. White crystalline sand, ranging from fine to medium coarse, is abundant in a number of pieces and crushed pottery appears to have been used in a few instances. The ware as a whole is firmer and of better quality than its general appearance would lead one to suppose.

Ornamented Ware. This group of material, except for its ornamentation, is in all respects practically identical with the preceding plain ware and the characters need therefore not be rehearsed. There is perhaps a slight indication of special developments in the rim, but that is all. The decoration therefore is our only concern. This embellishment is of one type from beginning to end and consists of a simple checker pattern, stamped on the outside of the bowl, presumably with a carved wooden paddle, such as is still used by the Cherokee.[1] But while the ornamentations are all of the straight-line order, a closer scrutiny reveals considerable variation. The normal pattern would result, let us say, from cutting into the face of the paddle two sets of equidistant parallel grooves so as to cross each other at right angles. By varying either the distance between the lines or the angle at which they cross, appreciably different results would be obtained. Thus the enclosed spaces between the crossing lines would become either square or oblong or lozenge-shaped, and their size might vary almost indefinitely. That the Oak Hill shellmound people appreciated this fact will be seen in Fig. 7 which gives the approximate range of variation in the material collected. All the suggested possibilities of form will be seen to occur and the size ranges from three to twelve elements (i. e., interlineal spaces) to the inch.[2]

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[1] Moore, (a), 1892, 916; (b), 156.

[2] Walker, 1881, 678.

[3] Holmes, (b), 116, 120–128.

[4] Holmes, (b), 121, including Fig. 57, comes to the same conclusion for the wares of the St. Johns River area. See also Wyman, (b), 53, 55.

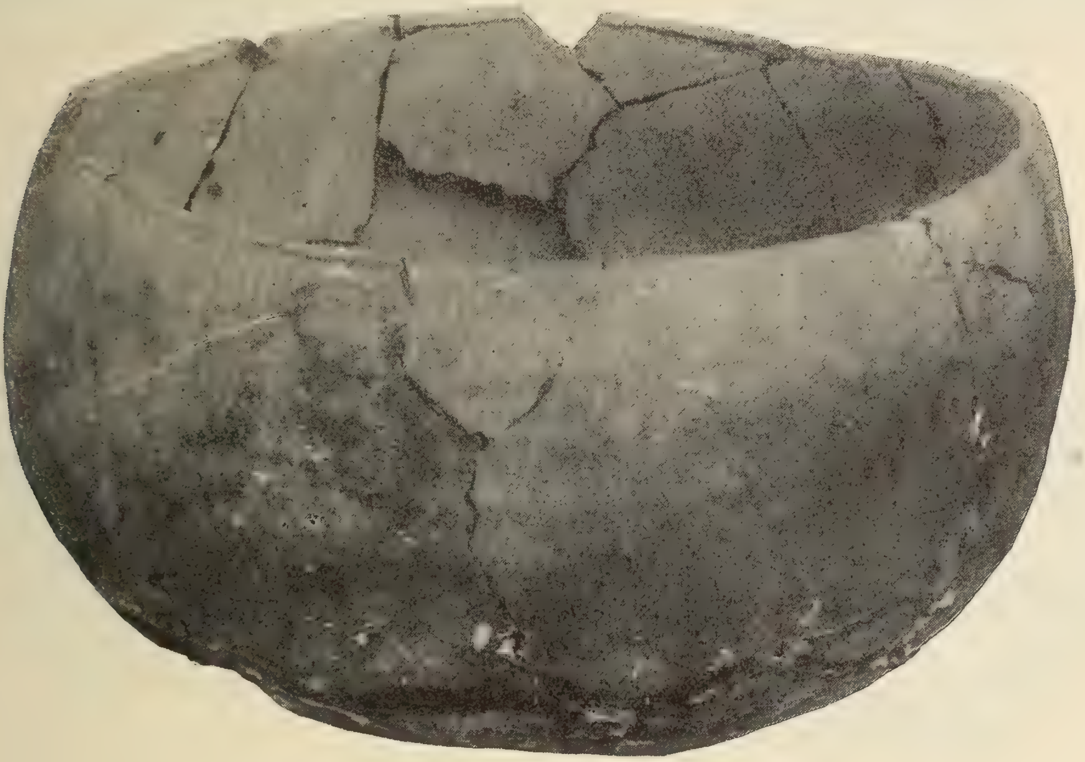

Fig. 6 (20.1–218). Common Unornamented Food Bowl.

Since the first draft of this report was written, the brief paper on some Indian River shell-heaps by Butler, already cited, has been issued. On page 106 the author states that he observed on the pottery from these

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[1] For illustrations of the Cherokee checker stamp see Holmes, (b), Fig. 46 and Pl. 113.

[2] For additional illustrations of the checker-stamped ware see Holmes, (a), 115 or (b), Plates 85, 109.

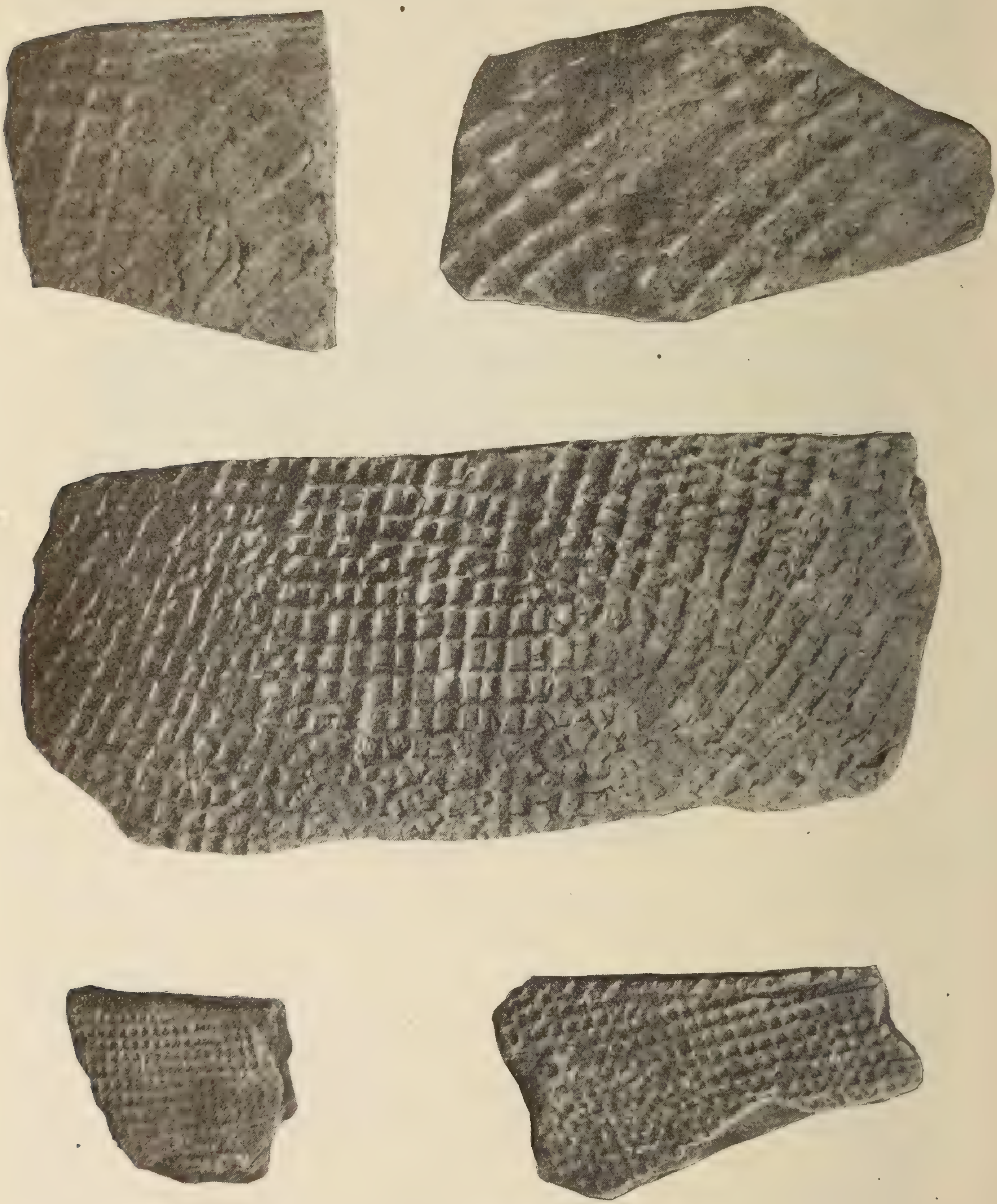

Fig. 7 (20.1–220, 219). Varieties of Stamp-Decorated Pottery from the Oak Hill Shellmound.

mounds "the impressions of basketry, wickerwork, mat-work, and wattle-work." This led to some correspondence, and also to a re-examination of both the collected specimens and the literature, with the result that I found Wyman[1] to state that he discovered three fragments of pottery — in as many different places on the St. Johns River — which had been moulded inside of baskets. Holmes also quotes authorities[2] for the use of basketry moulds in the United States, but cites no instance of it from Florida and expressly concludes[3] that the practice in that region has been greatly overestimated, the checker-stamp pattern often having been mistaken for basketry impressions. He does not deny its occurrence, but says it is the exception rather than the rule; and with this opinion I am inclined to agree. At any rate, the material — a hundred samples or more — collected by myself at Oak Hill and other neighboring sites shows only rectilineal stamp impressions.

Geographical Distribution of Checker-Stamped Pottery. We have now considered in a descriptive way all the essential facts brought to light in our shellmound. By checking up with the available literature it has turned out that nearly every important point in our discovery has been, if not always demonstrated, nevertheless more or less clearly apparent to several prior investigators. The single new fact seemingly brought out here for the first time concerns the isolated occurrence along a considerable stretch of the Indian River of the checker-stamped type of decorated pottery.

This checker-stamped pottery, according to Wyman,[4] has also universal distribution over the greater part of the St. Johns River area, directly to the west; but associated with it here and there is pottery decorated with a curvilineal stamp, with cord markings and with incisings. These new types have, however, only independently limited ranges of distribution within the particular area concerned, their various centers of dispersal lying presumably elsewhere. Thus the type decorated with the more or less complex curvilineal stamp, according to Holmes,[5] is clearly indigenous to Georgia and parts of the immediately adjoining states and forms the basis for his so-called South Appalachian ceramic province. Moore, who has a much wider acquaintance with the ceramic phenomena of the St. Johns region, seemingly agrees[6] with Wyman regarding the general distribution of the checker ware; but at the same time he lays much more stress on the time range, if not on the spatial range, of the other types of decoration, including even painted ware,[1] which however, occurs in only one mound and is regarded as of relatively late date. Farther west, on the Ocklawaha River, Moore also found the checker-stamp ware to be quite common,[2] but its occurrence was evidently overbalanced by the other types, painted ware being here quite prominent.[3] In addition he mentions the occurrence of raised or modeled embellishments [4] as well as a punctate type of decoration.[5] If we turn to Holmes, who has published several studies of the pottery in the eastern and southeastern United States, we find him to state [6] that the simple stamped ware of the St. Johns area is common throughout the Florida peninsula and that it extends west into Alabama and north to North Carolina and Tennessee. We might extend the range by adding that Moore [7] has since found examples of the same type of pottery as far west as Louisiana and that Smith [8] observed it even in northeastern Kentucky, near the Ohio River. In the same paragraph Holmes adds the significant statement that "it is not likely that it [the checker-stamped pottery] was characteristic of any particular people or culture group," an opinion with which the data embodied in the present paper seemingly warrant us in taking issue. In other words, according to the evidence now available, it seems that of the various decorated types of pottery found in the southeastern United States such as simple checker-stamped, complex or curvilineal stamped, cord-marked, pinched, punched, stippled, incised, engraved, modeled, and painted, the first-mentioned has possibly the widest geographical distribution. Moreover, its center of origin would seem to be located in east-central Florida because here it occurs in isolation; while, as we move out from this center to the west and the northwest we find it to be slowly thinning out quantitatively, being gradually replaced in different localities by one or more of the great variety of decorative types above mentioned. The remarkable exception to this rule is a small area in North Carolina where a few surviving Cherokee still practise — or did until recently — this same simple type of pottery decoration.[9]

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[1] Wyman, (b), 54.
[2] Holmes, (b), 36, 58.
[3] Holmes, (b), 69, 134.
[4] Wyman, (a), 451–452; (b), 54–55.
[5] (b), 130.
[6] Moore, (a), 1893, 709.

Having pointed out the probable center of origin for the checker-stamped pottery and also its geographic distribution, let us turn, finally, to the question of its historical range. Wyman,[10] it seems, was of the opinion that the traced or incised ware of the St. Johns region being cruder, was older than the simple stamped ware. Holmes, working presumably for the most part with second hand data and therefore at a disadvantage, appears to take the same view.[1] But, at the same time, in referring to the relatively simple decorative ideas most common in the St. Johns region as a whole, he seems to accept the current supposition that they were characteristic chiefly of the *middle period* of mound accumulation, "the early stage being without pottery and the later having several varieties of ware" of a more elaborate and highly differentiated character.[2] The actual time order of the checker-stamped pottery along the St. Johns is therefore at best a matter of doubt and it is not worth while risking any offhand opinion on the subject. However, at our tentative center of origin for the checker-stamped pottery, along the Indian River, the situation is perfectly clear. Here the ware in question lies stratigraphically directly on top of the crude unornamented ware which latter in fact develops side by side with it to the end of the local shellmound occupation. Along the St. Johns River, a few miles to the west — whatever be the stratigraphic conditions — we have the same ceramic types, viz., plain and checker-stamped as on the Indian River, with the addition of several new types such as incised and painted wares. The question before us is: are these new types of earlier or later date than the type isolated on the Indian River? One can hardly afford a dogmatic answer, but the impression certainly is that they are later. For one thing, as already stated, the checker-stamped pottery has extremely wide distribution, which of itself argues for its relatively great antiquity. Again, while it is conceivable that the great variety of decorative ideas mentioned above may have originated in as many different places in the west and northwest, it is difficult to believe that in an area no larger than Florida the contemporary ceramic products should not be associated throughout. In other words, the presumption is that since no painted or incised or curvilinearly stamped ceramics are found mixed with the checker-stamped ware of the Indian River country, they were not in existence. The fact that they do occur in association on the St. Johns River would then signify, among other things, that the Florida shellmound people at that date had left the Indian River. But the whole subject of Florida's aboriginal history must be worked out in the field. I have merely sought to indicate that there is such a history and that, as Walker wrote,[3] nearly forty years ago, "the key to the whole matter is a critical study of ancient pottery."

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[1] Moore, (a), 1893, 709, 723; but see also (b), X, 102.
[2] Moore, (b), X, 535, 539, 540, and Plate 86, Fig. 2.
[3] Moore, (b), X, 520, 521, 522, 530, 536, 543.
[4] Moore, (b), 530, 542.
[5] Moore, (b), X, 541.
[6] Moore, (b), 122.
[7] Moore, (b), XVI, 11.
[8] Smith, Plate 25.
[9] Holmes, (b), 56, 134.
[10] (b), 53.

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[1] (b), 121.

[2] (b), 120–121.

[3] Walker, 1881, 680.

SUMMARY AND CONCLUSIONS.

We have outlined briefly the main facts bearing on the situation, size and mode of growth of a large Florida shellmound, by this time already passed out of existence; and have considered at somewhat greater length the nature of its contents. The Oak Hill mound is only one of many similar deposits near and far, and it appears to agree with the neighboring sites in all important respects save one or two. Thus, the apparent absence of pottery in the extreme bottom layer, together with the presence of plain ware in the middle horizons and, finally, checker-stamp decorated ware in the upper level, is a corroboration of prior determinations by Wyman and Moore in similar mounds throughout the adjacent St. Johns River district. The one outstanding new fact of importance brought out in this brief study is the stratigraphic and geographic isolation of the simple checker-pattern type of decoration. The probabilities are therefore that this type of pottery first came into use here and that in view of the extensive distribution it is one of the very oldest ceramic traits to be found in the southeastern states. There remains to state in conclusion, that the tremendous diversification of ceramic traits evident in this general region of North America, both as regards form and decoration, furnishes an ideal basis for a splendid piece of research.

ADDENDA CONCERNING THE VERO DISCOVERY.

Without wishing here to enter upon a discussion of any one of the various phases of the difficult problem presented by the anthropological discoveries at Vero, I shall record merely a few of my own personal observations, made on May second and third, 1917.

On the day of my arrival, Mr. Isaac M. Weills, the resident gentleman who has done a good deal of the collecting, had just begun to search for some material for Dr. Hay. Naturally, therefore, I remained, not as long as I could have wished, but for a day and a half or long enough to form some opinion on the merits of the site. Mr. Weills and I inspected and tested both canal banks at various places between the railway bridge and the spillway, settling down to work, finally, on the north bank near his "500 foot" mark, i. e., just below the entrance of the small north gully, where specimens of all kinds seemed exceptionally frequent.

The general nature of the formations observed has been described a number of times by competent geologists and others and need not be rehearsed.[1] The special features of the particular section worked by us were seemingly fairly representative; but if not, the variation lay on the side of simplicity. Briefly stated, the conditions were as follows: About five feet below the general level of the surrounding country there ran a seemingly extensive deposit of "marine shell marl" of undetermined thickness, designated by Dr. Sellards as stratum No. 1. With this we have nothing to do so far as the stratigraphic position of archaeological data is concerned. Resting on No. 1 were two additional successive deposits each about two and one half feet thick and known respectively as stratum No. 2 and stratum No. 3, counting from the bottom up. Stratum No. 3, the top layer, was a disorganized mass of dead roots, leaves, pieces of wood, bark, etc., enclosed in a rather attenuated matrix of whitish sand — wind-blown sand it seemed to be. It is a deposit which is still in process of formation and which at this point is simpler and more homogeneous than it is on the south side of the canal where an irregular bed of marl-like substance is introduced some four inches below the surface mulch. Stratum No. 2 was composed of a rather homogeneous fine sand, colored blackish at the top (due presumably to moisture seeping through from the peat-like formation above) but ranging through brownish and slightly stained to pure white in the lower third of the deposit. The upper three or four inches of this sand was slightly cemented and the hardened surface was rather uneven.

The only irregularity in the section to which it seems worth while to call attention was the distinct occurrence in the discolored part of stratum No. 2 of more or less vertically winding passages — perhaps root holes, one to five inches in diameter — which had been filled with whitish sand presumably sifted down from the stratum above. In one place also the underlying marl formation ran out, but possibly it had been removed by the creek.

We worked our section altogether for the better part of one day and found our specimens, both paleontological and archaeological, rather numerous. Most of our material came from the sand layer, i. e., stratum No. 2, and all the archaeological specimens — five of them — taken out in my presence, were found lying directly on the hardened surface of this formation. They consisted of one complete and three incomplete bone awls together with a bit of flint — all comparable to the specimens figured by Professor MacCurdy.[2]

Unfortunately, potsherds were not met with; but Mr. Weills kindly gave me a few samples and he has since sent me others, both from the section and from the surface of a neighboring "grove," in addition to two fragments from a shellmound in the vicinity. Interestingly enough, the shellmound samples are of the plain and checker-stamped sort comparable in every way to the predominating wares found at the Oak Hill shellmound. The sherds given me as coming from the Vero section and from the neighboring grove are very nearly identical and differ from the shellmound pottery in having a decidedly gritty instead of a "chalky" paste. The gritty type of ware does occur, however, in the mounds of Florida as Holmes and others have stated. This gritty ware found at Vero is perhaps on the whole of a coarser nature than the other, and, so far as my information goes it is not ornamented. Without going into the subject at length, therefore, it would seem not impossible from a cultural standpoint that the Vero section belongs to the middle period of shellmound occupation along the Florida East Coast.

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[1] See e. g., Sellards in *Science*, vol. 44, 615–617.

[2] *American Anthropologist*, N. S. vol. 19, 1917, 255, 257.

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ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

VOL. XXII, PART III

ARCHAEOLOGY OF THE POLAR ESKIMO

BY

CLARK WISSLER

NEW YORK
PUBLISHED BY ORDER OF THE TRUSTEES
1918

ARCHAEOLOGY OF THE POLAR ESKIMO.

By Clark Wissler.

PREFACE.

The objects upon which this study is based are from the archaeological collections made by members of the Crocker Land Expedition of the American Museum of Natural History, 1913–1918. The sites represented are in the main on the shores of North~~east~~WEST Greenland, which in historic times were occupied by a group of Eskimo known in America as Smith Sound Eskimo and in Denmark as the Polar Eskimo. The writer was not a member of the expedition, but represents the anthropological staff of this Museum, in whose custody the collections were placed. He is not, therefore, familiar with the characteristics of the sites from which these objects come and can treat them only as objective examples of Eskimo culture. As such, they offer some suggestive contributions to Eskimo anthropology.

The members of the expedition, particularly Doctor Edmund Otis Hovey, geologist of the Museum, Mr. Donald B. MacMillan, the leader of the Expedition, and Captain George Comer, well known to students of the Eskimo for his former contributions, all gave the greatest assistance in the preparation of these pages. The pen drawings were made by William Baake and the plans and map by S. Ichikawa.

CLARK WISSLER.

June, 1918.

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INTRODUCTION.

The objects described in this paper are from the archaeological collection of the Crocker Land Expedition. The value of observations based upon old Eskimo graves and camp sites is now clearly realized and it may be taken for granted that future explorations in the Arctic will give special attention to the collection of such data. Scandinavian scholars have made considerable progress in this direction, particularly for East and South Greenland. In this country, the first specific contribution was Captain Comer's collection from Southampton Island, Hudson Bay, fully discussed by Boas. Some years earlier, collections from Siberian sites were brought to this Museum by Bogoras, a member of the Jesup North Pacific Expedition, but these were not fully described. Still later, the Stefánsson-Anderson Expedition returned very large collections from sites all the way from Point Hope, Alaska, to Coronation Gulf on the east. These, with the collections returned by the Crocker Land Expedition, present an Arctic archaeological series not paralleled anywhere. Since this Museum also has collections from living Eskimo representing every important cultural group from Siberia to Greenland, it offers exceptional facilities for comparative studies.

While no archaeologist accompanied the Crocker Land Expedition, its members were fully aware of the importance of such data and kept a sharp lookout for old house sites and camp refuse. Captain George Comer, noted for his contributions from Hudson Bay, accompanied the relief vessel in the summer of 1915. Those familiar with the full history of the expedition know that this vessel was frozen in at Parker Snow Bay. Captain Comer was, therefore, an involuntary member of the party until the return of all in September, 1917. Not expecting to winter with the party, he was neither equipped nor otherwise prepared for archaeological work, but, wishing to make the most of the opportunity, he did what he could.

His method was to locate old house sites and dig away the débris covering the original floors. In all, fifty-three such sites were plotted and excavated. Their distribution ranged from Parker Snow Bay to Rensselaer Harbor. In addition, some twenty graves were examined.

Anyone with a general idea of Eskimo life will understand how unlikely it is that a single site will be occupied continuously or even for appreciable periods at intervals. Such conditions are decidedly unfavorable to archaeological investigations, since their successful outcome depends upon the establishment of chronologies as interpretations of observed stratifications, or superpositions. Nevertheless, Captain Comer found little difficulty in distinguishing between sites belonging to Eskimo of the last fifty years and those of earlier date. His collections, taken objectively, show that some reasonably old sites are represented.

Yet, the most important discovery was a considerable deposit of camp refuse at a site near North Star Bay, a small harbor within Wostenholme Sound. Since the mere location of such a site is unique in Eskimo archaeology, we shall speak of it as Comer's Midden.

CHARACTERISTICS OF THE LOCALITY.

As to the location and physical characteristics of the site, the following statement is made by Doctor Edmund Otis Hovey: —

The archaeological site dug into by Captain George Comer near North Star Bay was in front of the igloos forming the Eskimo settlement of Oo-ma-nahq, which is actually on the southern shore of Wostenholme Sound. It is on the north side of the isthmus leading out to the butte called Oo-ma-nahq, which rises about seven hundred feet above the sea at the north side of the mouth of North Star Bay. The neck of land lying thus between North Star Bay and Wostenholme Sound presents a gently rolling surface which has been a sea bottom within recent geological time. It consists of a sill of ancient basic igneous rock (diabase) covered with a thin mantle of sand, gravel, shingle, and bowlders. The highest portions of the plain, which is from a quarter of a mile to a mile in width, are about fifty feet above the sea. The igloos stand near the sea and are about fifteen feet above high water mark. They command an excellent outlook northward across the Sound and a broader view can be secured from the low cliffs rising about twenty-five feet above the water fifty or sixty yards to the northeast. The low, gentle ridge which ends in these cliffs gives the igloos a measure of protection against the heavy wind that occasionally sweeps out of the fjord. The Eskimo have occupied with igloos at least three sites along the south coast of Wostenholme Sound, but that at Oo-ma-nahq shows evidence of being the principal one utilized. In fact, there are many ruins of old igloos scattered along a zone bordering the sea at this locality, but the natives seem never to have dwelt along or near the shore of North Star Bay itself. The ice remains from two to three weeks longer in North Star Bay than it does in the more open Wostenholme Sound, while seals, walrus, and narwhal are more abundant in the Sound than in the Bay and can be hunted more easily and successfully from Oo-ma-nahq than from North Star Bay.

The refuse heap at which Captain Comer worked, lay in front of three igloos nestling in the lee of the low columnar basalt or diabase sea cliffs to which I have referred, their entrances being from ten to twenty feet back from the shore line. The heap was formed by throwing débris from the dwellings over the bank toward the sea. In cross-section it was inclined lenticular in shape, its base being the steep shingly beach, and, toward the eastern end of the deposit, the ledge of rock which rises one to three feet above it. The lay of the ground caused most of the material thrown on to it to slide or roll down to the bottom of the slope, where much of it would be washed away by the sea or carried off with the ice foot. The vertically lowest part of the heap, therefore, would not contain the oldest material, but the oldest articles would be those which stuck to the inclined bank and the successive layers, or were held in place there by snow or freezing water until they were covered. The bottom of the deposit, that is its lowest portion vertically, seemed to me to be a mixture in respect to probable antiquity. There did not seem to be anything in the nature of the deposit itself that indicated its age in years. Its rate of accumulation would depend on the number of families occupying the nearby igloos, the continuity with which the dwellings were used and more or less upon the abundance of food and other material. In times of plenty more would be lost or thrown away than in times of scarcity. The deposit consisted of artifacts mixed with bones, whalebone, ivory, decayed grass, earth, and stones. It exhaled a strong odor of ammonia when the thawed portions were disturbed.

Excavations in Comer's Midden.

Fig. 2 shows the site of Captain Comer's excavations. According to his notes, a considerable space at the foot of the ledge was filled with fallen rock and sand. This mass of débris presents a triangular cross-section with a base of about ten feet. Built up on its irregular surface was a layer of camp refuse to the average depth of about five feet. A section of this was dug away as shown in the illustration.

Captain Comer assumed that since the outer surface of the midden was subject to repeated thawings and freezings, it would be wiser to discard, or segregate this layer. Consequently, about two feet was removed, exposing the solidly frozen mass beneath. It is apparent that the refuse of each year raised the level of the heap and thus brought one notch higher the perpetually frozen deposit beneath. Excavations in this frozen layer were tedious. It was necessary to wait until the surface had thawed for an inch or two, then scrape the muck away and wait again.

All of the objects described as from this midden were taken from the frozen layers where they had been in perpetual cold storage ever since they reached the ice table. On this account, we cannot judge their ages by degrees of decay.

The Age of the Deposit.

While the place of these remains in Eskimo culture is a point to be demonstrated in the succeeding discussions, certain general observations may be noted at this time. In the first place, stone tools of every kind were absent. Only three slate knives were found, a few flakes of flint, a bit of chalcedony and two stones showing chipping (Fig. 13). It may be objected that these are, nevertheless, sufficient evidence for the use of stone, but our experience with other sites around Hudson Bay and westward is that the camp débris left by a stone-using Eskimo, will yield many examples of such use. Further, if the many hafts of tools found had indicated stone points and blades, the failure to find stone here might be ignored as a puzzling inconsistency, but as we shall see, these hafts indicated the use of metal. In fact, some tiny fragments of iron were secured.

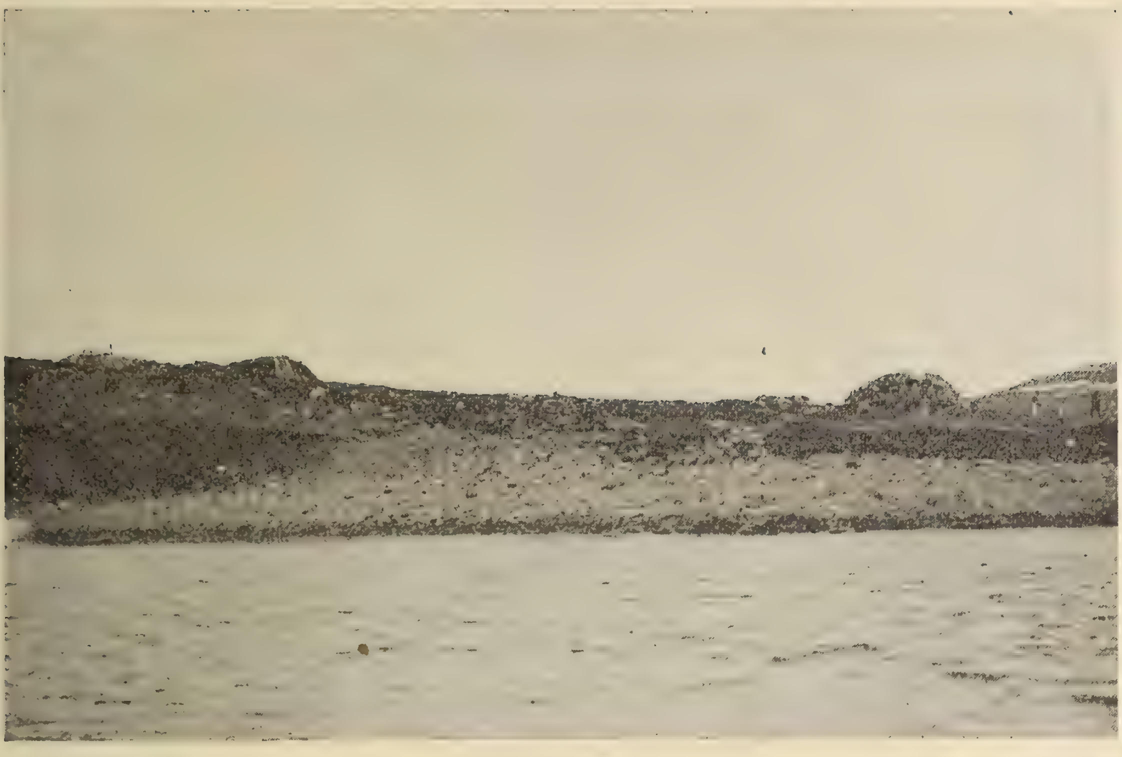

Fig. 1. The Village of Oomanahq, Comer's Midden to the Left. Photo by Dr. E. O. Hovey.

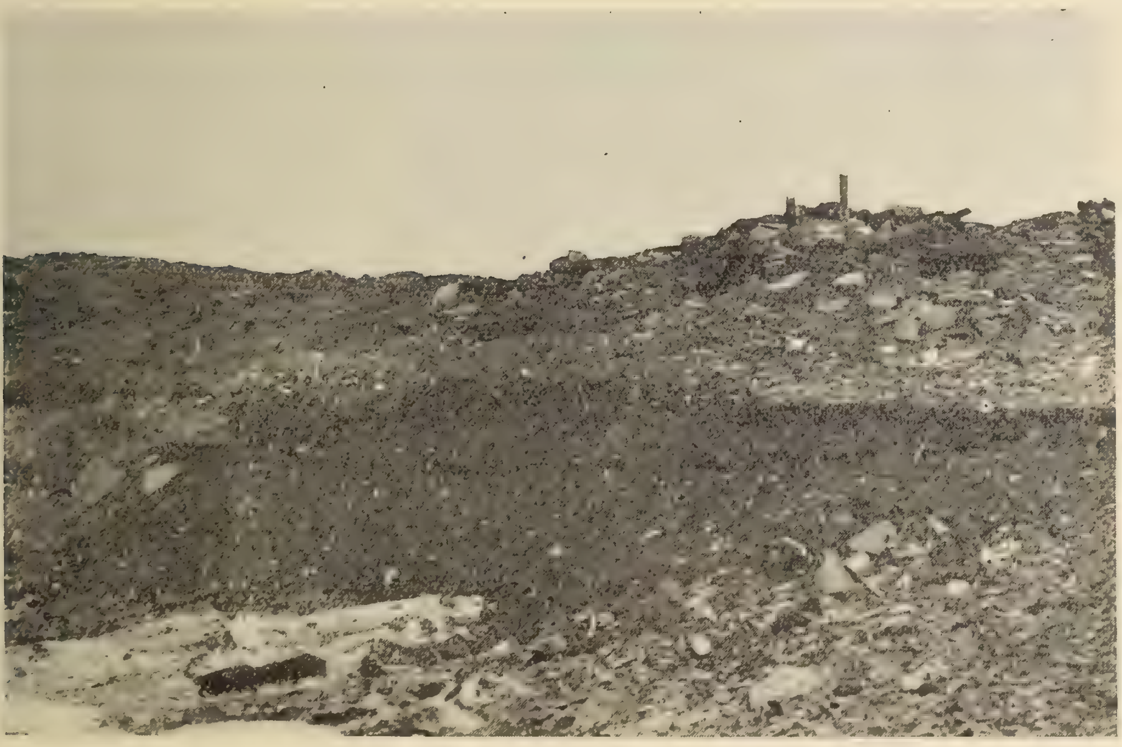

Fig. 2. Near View of Comer's Midden showing Excavations. Photo by Dr. E. O. Hovey.

The other materials shown in the collection are bone, antler, wood, and whalebone. Of ivory, there are a few examples, all of which show little weathering and according to Captain Comer's statements were on, or near, the surface. The distribution of the other materials was approximately uniform, except that the objects of whalebone were near the bottom.

Large quantities of unworked bone were removed, in fact such material made up a large part of the refuse heap. In the main, there were the bones of rabbits, birds, caribou, and seals. Seal teeth were also numerous. Those of the bear were seldom met with and the walrus scarcely at all; indeed, but a single tooth for the latter. Ivory, as stated, was scarcely in evidence. On the other hand, the true whalebone was surprisingly abundant, though body bones were not equally well represented.

Another striking feature was the great mass of spruce wood fragments, suggesting that wood played a prominent part in the culture of these Eskimo.

As the description of the site suggests, the precise determination of the order of accumulation is not easy. Objects thrown over the bank would tend to reach the bottom of the sloping refuse heap, so that we may suspect the horizontal order at the base to be the most significant. However, Captain Comer's method avoided many of the complications presented, for he first took off two to three feet of the outer surface and segregated the objects found. The remainder of the deposit was frozen and necessitated removing but a thin layer day by day as the freshly exposed surface thawed out. Thus, there is no reason to doubt that the collection from this lower section of the refuse belongs to a period earlier than that from the surface layer. No glass or other traces of trade articles were found in this lower layer, though such may be seen on the surface at camp sites around the bay. At Etah several of the house sites excavated yielded bits of glass and some a few brass shells of the type used in Kane's time, while many gave no sign of European contact. Further data upon these points will be developed as we proceed with the detailed account of the objects found.

METHODS OF WORKING BONE AND IVORY.

Although repeated references are made to the technique of bone and ivory working among the Eskimo in the many publications upon the culture of these people, no full description of the processes involved has come to notice. It is generally stated that these materials are worked by cutting, sawing, and drilling, and that of these, the most preferred and perhaps the most aboriginal, is drilling. A discussion of these processes, as illustrated in the archaeological collections returned by the Expedition, seems advisable, since they may give us some basis for estimating the relative age of the Eskimo cultures represented.

Of the three processes named, sawing is undoubtedly recent, since it can only be executed in the manner observed in the collections by the use of a metal saw. Some of the objects from each of the localities represented give evidence of having been worked by sawing. In some cases, the trial saw cuts of the native workman are still to be seen. These are of such a form and size as to preclude the possibility of the use of any other implement save a modern steel saw. Even specimens from Comer's Midden present a few examples of sawing, though most of the antler objects in that collection have been worked by cutting or hacking. (But one piece in the entire lot shows evidence of having been grooved on opposite sides and then broken.) On the other hand, the collections from other points in North Star Bay, from Parker Snow Bay, Saunders Island, and the vicinity of Etah, furnish many examples of sawing, particularly in the edges of bone sections for sled runners and on the edges of ivory sled shoes. Anyone familiar with Eskimo collections will recall frequent examples of saws, in many cases, of native manufacture. The usual form is a small blade of trade steel, the teeth for which have been produced by filing, hafted with a curved piece of antler somewhat like the handle for the ordinary carpenter's saw. As will be shown elsewhere, no metal tools of any kind were found in Comer's Midden, but from the other sites a number of such implements was collected, among which is a saw of this type from Etah. It is further plain that all of the collections obtained, with the possible exception of those from the deeper layers in Comer's Midden, belong to a period when trade saws and their counterparts were in general use among the Eskimo of Greenland.

As stated before, the preferred Eskimo method for cutting bone, antler, or ivory, is by drilling holes side by side in the direction of the desired cut and then breaking off the material along this line. While this method has been cited as almost peculiar to the working of ivory, our collections show that it is also applied to working antler and bone of the whale, though it is true that the number of examples of such drilling is far greater in ivory than in the other materials, particularly in the collections from the vicinity of Etah. On the other hand, it will be noted that ivory objects were of rare occurrence in Comer's Midden and such examples as were noted seem to have been on the surface. Nevertheless, among these is a piece of ivory cut by drilling with a very small drill, something less than one-sixteenth of an inch. The holes are deep and clear-cut, such as scarcely could have been accomplished without a metal drill. But there is also a piece of antler from this same deposit cut in the same way. The collections from Etah contain a very fine example of the application of this method to the cutting of antler in which we find a large tine has been cut off by drilling twenty-four holes in a line passing entirely around the piece. The drill in this case was about three-sixteenths of an inch. There are other examples in the collection of antler cut in the same manner. Yet, if we take into consideration the entire number of worked pieces of antler returned by the collectors, it must be said that the usual method is by sawing, except in Comer's Midden, where almost without exception the antler has been cut or hacked.

The Etah collections contain a large series of whale bone slabs used in making sleds. Most of these, as previously stated, have been brought to their present shape by sawing, but a few show evidence of having been cut by drilling. Similar pieces were not returned from the other localities, except one from North Star Bay which, incidentally, was cut by drilling. From Comer's Midden there are no examples of such whale bone sled pieces, though there are pieces of worked bone evidently used in the construction of sleds. The inference would be that the type of sled used by the people occupying the site of Comer's Midden was different from that returned by these collections. To this point we shall refer again.

From Comer's Midden there is an interesting oval flat piece of bone, a section of which has been cut out by drilling. A similar piece was found nearby on the shore. A piece of ivory sled shoe from Etah shows an interesting example of drilling in some secondary working. It had been brought to a point by drilling and then wedged so as to break away the corners.

From Etah and Saunders Island come many sections of ivory sled shoes, all showing evidence of having been worked by splitting and sawing. Their form, size, and arrangement of the drill holes show them to be of one precise type. The interesting point is that no such sled shoes were found at Comer's Midden. There were, however, long pieces of bone drilled in a different manner which may have served the same purpose.

Another object of frequent occurrence in Comer's Midden is a bone snow knife of the well-known Greenland type. The curved handle for this has been cut out by hacking. In no case is there evidence of sawing or drilling.

The apparent rarity of drilling at Comer's Midden, in contrast to what seems to have been the rule in the other sites, makes a brief examination of drills desirable. Five metal drills in wooden shafts were collected: one from Saunders Island; one from the shore of North Star Bay; one from Parker Snow Bay; and two from Etah. One or two special points in these deserve mention. In one specimen (60.1–4575) the tang of the drill, which is driven into the wooden haft, has been given a triangular form, doubtless to prevent its twisting in the shaft. Fig. 3 seems to have been a double tool. When found, the metal drill point was in place, as shown in the drawing, but on examination, it appears that it was held in place laterally by two small wooden wedges. When these were pulled out the shaft was easily withdrawn and the other end of the point found to have been beaten out in the form of a small chisel or other cutting tool. From general appearances, this metal point seems to have been beaten out from a nail. No similar tool has come to notice and this may no doubt be set down as another example of Eskimo ingenuity. The points of all the drills have the same form, as shown in Fig. 3. They are slightly flattened with somewhat flaring edges. That this form is rather universal in Eskimo drills is indicated by its occurrence in specimens from Alaska.[1] Murdoch describes a specimen with a bone point of this same shape suggesting that the type is an old one even antedating the use of metal. Naturally, the stone drill points that have been so far collected do not have this form, but taper slightly from the point. Nevertheless, they do show a rounded end similar to the iron specimens in our collections.

As previously stated, no metal drills were found in Comer's Midden; and though there are a considerable number of wooden objects, among these appear no drill shafts. Still, we do find a piece of bone (Fig. 4) which bears a striking resemblance to both the metal drill point and to the bone point described by Murdoch. It is not certain that this is a drill point but the similarity is so striking that attention is called to it. With this exception, there are no specimens from the Midden that suggest drills, though, of course, there are evidences of drilling in some of the objects.

In conclusion, it appears that while there may be some differences between the culture of the people occupying the site of Comer's Midden and those occupying the other localities from which collections were returned, all belong to a period when metal tools were in general use. Particularly, the size, depth, and form of drill holes found in the worked material at most of the sites leaves no other conclusion but that metal drills were used.

KNIVES.

Perhaps the most interesting objects in the collections from Comer's Midden are some fragmentary knife hafts similar to some specimens described by Boas from Southampton Island. The best example of this type was fully described by this author whose illustration we reproduce here,[2]

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[1] Murdoch, John. "Ethnological Results of the Point Barrow Expedition" (*Ninth Annual Report, Bureau of American Ethnology,* Washington, 1892), 179.

[2] Boas, Franz, "Second Report on the Eskimo of Baffin Land and Hudson Bay" (*Bulletin, American Museum of Natural History,* vol. 15, part 2, 1907), 384, Fig. 178.

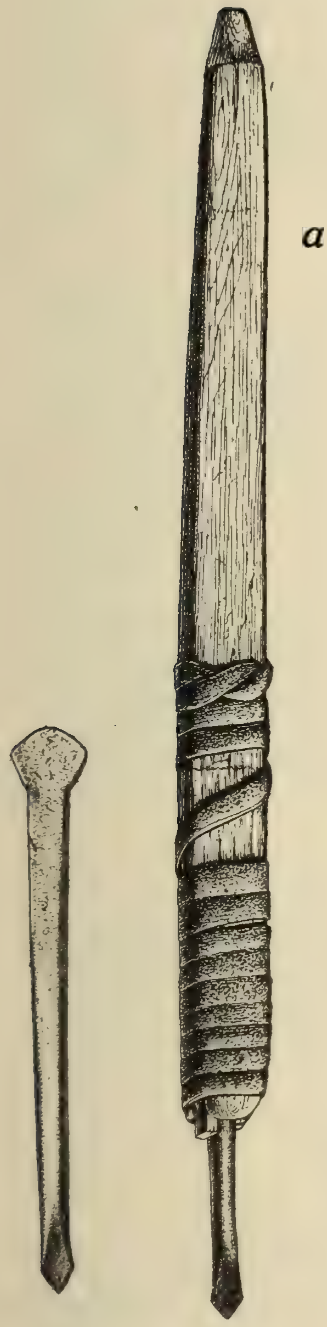

Fig. 3.

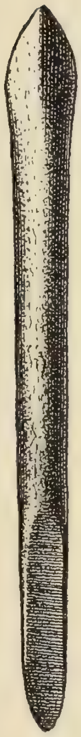

Fig. 4.

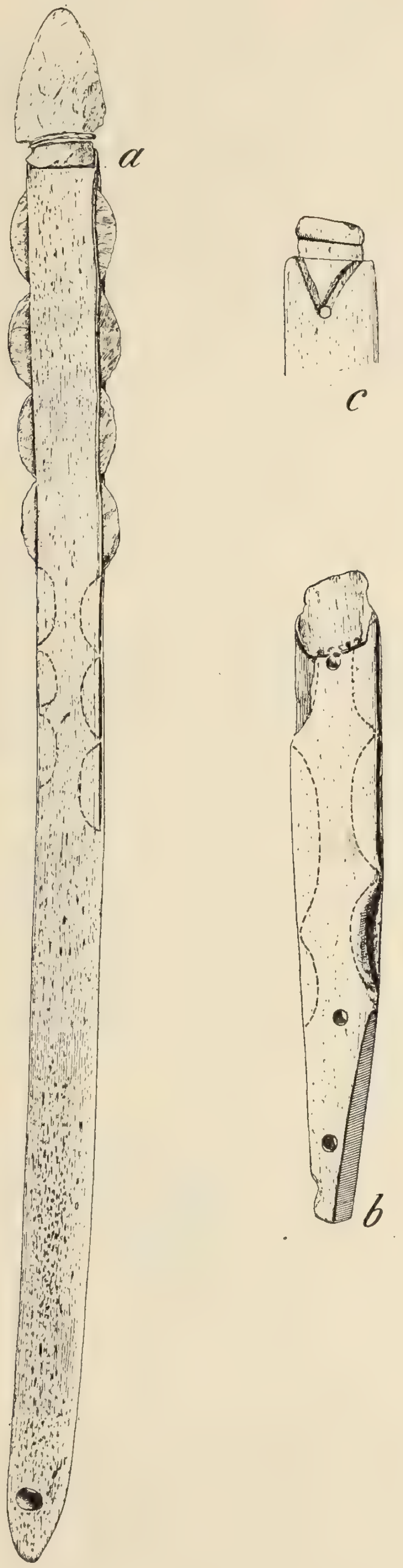

Fig. 5.

Fig. 3 (60.1–4540). Drill with a Detachable Point, Parker Snow Bay. Length of *a*, 23.5 cm.

Fig. 4. (60.1–4480). A Bone Point resembling a Drill, Comer's Midden. Length, 7 cm.

Fig. 5 (60–5144, 5389). Bone Knives with Stone Blades, Southampton Island. Length of *a*, 68 cm. Boas, 1907.

(Fig. 5). It will be noted that the cutting edge of this knife is formed by blades of chipped stone inserted in pockets along the edge of the bone haft. A fragment of such a haft, in every way similar to the figured specimen from Southampton Island, is shown in Fig. 6a. It had, as may be seen, a point at the end, while on each side of the part remaining we find three deep pockets for the insertion of blades. The difference between this specimen and the one from Southampton Island lies chiefly in the width of these pockets. This width is uniform from end to end and is approximately 2 mm. In fact, it is made with such precision that one must assume that the blades to be inserted were exceedingly regular. This regularity and the narrowness of the slot makes it difficult to conceive that stone was used as the knife edge. It seems much more likely that metal blades of a leaf-like shape were inserted in these pockets.

Fig. 6c is part of a knife haft both ends of which are missing and which seems to have had a row of similar blades on one side, three pockets for which remain. These have the same regular form as the preceding, but are something less than 2 mm. in width. Fig. 6b differs from the preceding, for while it is cut to receive both end and side blades the grooving does not take the pocket form, but is continuous as if a long metal blade had been inserted. It will also be noted that the point was held by a rivet. The two holes at the opposite end may have been to repair a break. The long continuous groove, or slot, in this handle is also between one and two millimeters in width. It is true that the bottom of the groove contains slight pocket-like depressions, but there are no partitions to separate these, so that it may be assumed that the workman intended to cut the slot an even depth.

Figs. 6d and 6c represent small fragments of knife hafts with grooves on one edge only. These grooves are similar to Fig. 6b in that they are continuous and without pockets.

There are a number of other specimens in Comer's Midden collection containing grooves similar to those figured.

In general, it appears, therefore, that while we have here undoubted examples of knives formed after the same pattern as those described from Southampton Island, the character of the grooves is such that iron or other metal blades must be assumed. As stated elsewhere, practically no chipped stone was found in Comer's Midden. Also, strange to say, but two definite traces of iron were found.

Captain Comer notes in his diary, under date of August 29th, 1916, that he found part of a knife blade two feet below the surface containing flakes of iron set in a groove so as to form a cutting edge. He made, at the time, a rough sketch of this specimen, which is reproduced here (Fig. 7). Unfor-

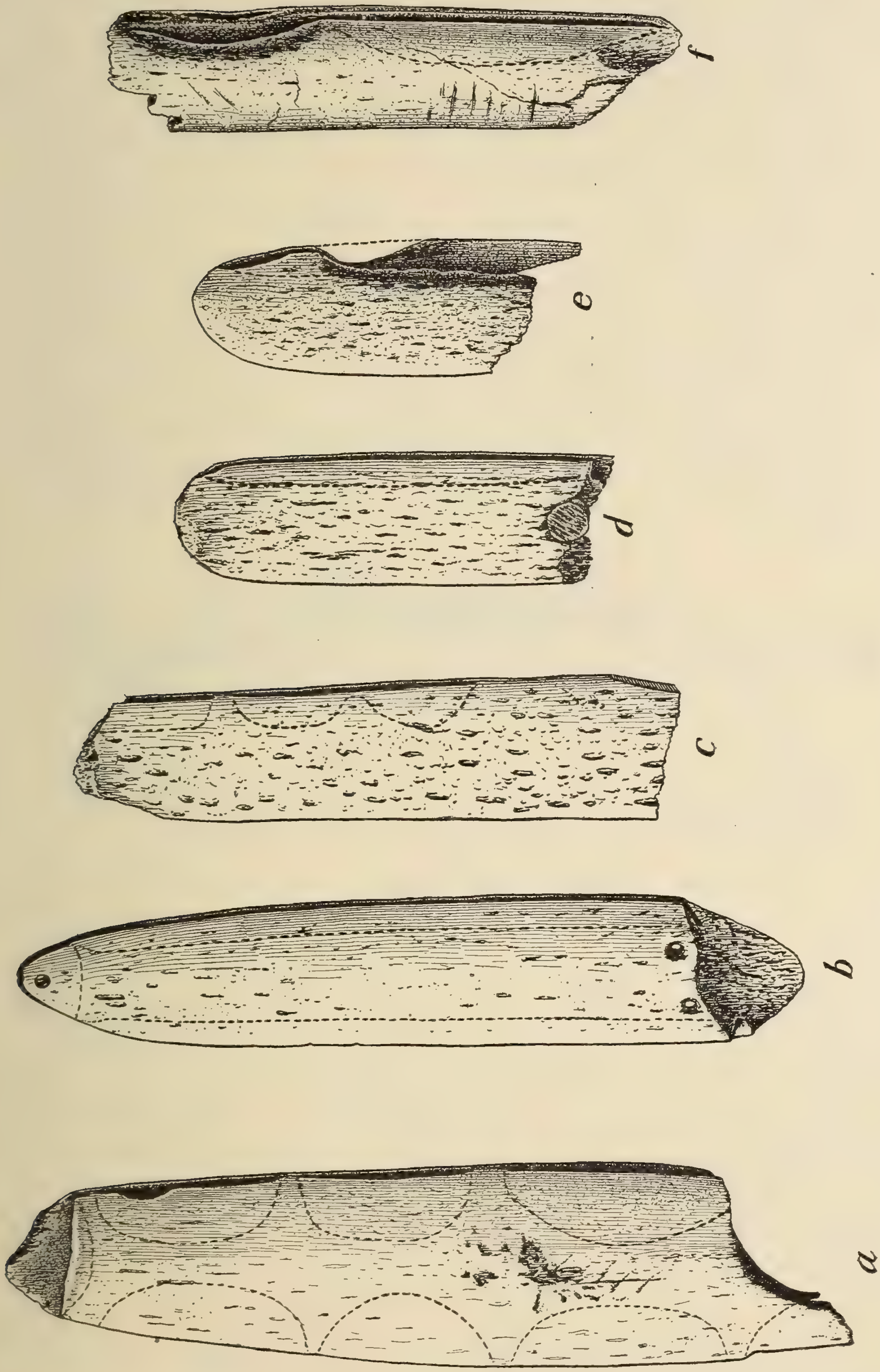

Fig. 6 (60.1–4409a, 4409b, 4409c, 4409d, 4409e, 4614). Bone Hafts for Knife Blades. Length of *a*, 16 cm.

tunately, this specimen, with others, was lost in transit. Nevertheless, it must be taken as conclusive evidence that the people occupying this site did use knives formed by setting small flakes or leaf-like pieces of iron in a groove along the edge of a bone haft. As is well known, such knives have been noted from Western Greenland, the cutting edge to which consisted of small leaf-like flakes of iron. Some writers have assumed this to be meteoric iron.[1]

The haft shown in Fig. 6b has a few minute flakes of oxidized iron at the bottom of the groove, but since this knife is evidently grooved for a long continuous blade it seems unlikely that this could have been meteoric iron. It seems, therefore, reasonably certain that though the people of this site may have at one time possessed meteoric or other native iron, they nevertheless did have access through trade channels to iron tools or, at least, to a sufficient quantity of iron to manufacture knives according to their old pattern. The missing specimen referred to in Captain Comer's diary certainly suggests the descriptions of meteoric iron knives cited by Boas.[2]

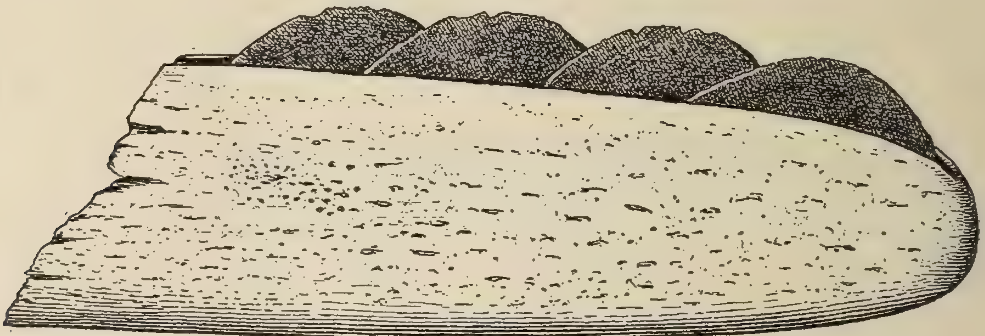

Fig. 7. Part of Bone Knife Haft bearing Iron Blades. Drawn from Captain Comer's sketch.

We were unable to find any traces of iron remaining in the specimens represented in Figs. 6a and 6c, or the ones in which there were well-defined pockets in which leaf-like blades must have been inserted. As previously stated, our reasons for assuming the material used in the pockets of these knife hafts was iron, are their regular shape and narrowness. Fortunately Mr. MacMillan secured from Rensselaer Harbor in August, 1916, what is probably a knife (Fig. 8) made of antler, in one side of which is a pocket containing a chipped blade. The pocket or groove for this blade is shaped differently from the specimens in Comer's Midden. Instead of having a uniform width, it is oval, tapering at each end to conform to the outlines of a chipped flake. It further appears that there was a similar stone blade on the opposite edge, but only a small part of the groove remains. The finder of the specimen turned in a second piece of stone which may have rested in this groove when the haft was intact.[1]

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[1] Boas, *ibid.*, 384–386; Thalbitzer, William, "The Ammassalik Eskimo. Part I. Contributions to the Ethnology of the East Greenland Natives" (*Meddelelser om Grønland*, vol. 39, Copenhagen, 1914), 488–490.

[2] Boas, *ibid.*, 384.

This find is not only interesting because it gives us an opportunity to compare the two types of knife haft in question, but also because it is the first specimen, to our knowledge, found in Greenland suggesting the type of knife described from Southampton Island by Boas and the curious harpoon heads from Alaska and adjacent regions in the sides of which were grooves containing small flaked blades.[2] It would seem therefore that the use of knives with cutting edges formed by a row of flakes was at one time universal among the Eskimo from Greenland to Alaska. We may be warranted, therefore, in concluding that the iron knives formed by setting small flakes of iron in a row along the edge of the bone handle, were copies of the older stone knife, as has been suggested by Boas, Thalbitzer, and others[3] and also that the pocketed hafts from Comer's Midden belong to this series. It need not necessarily follow that the natives at Comer's Midden used meteoric iron. It may be imagined that natives coming in contact with iron in small quantities and incidentally, would be likely to make knives in the form of those already in use and thus make them conform to the old type of stone knife.

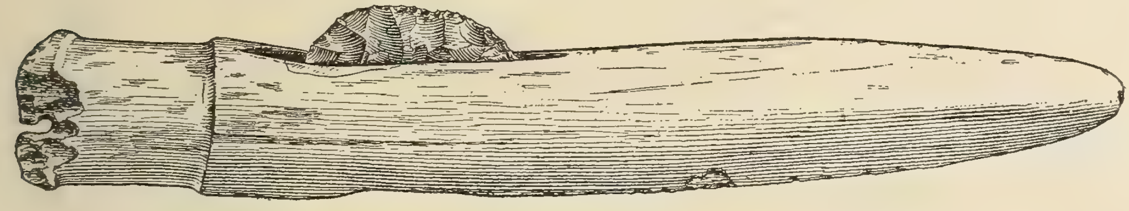

Fig. 8 (60.1–5096). Knife bearing Lateral Stone Blades. The opposite blade is missing. Rensselaer Harbor, Length, 15 cm.

The probability of this is suggested by another find. In June, 1917,

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[1] As to the finding of this specimen Mr. MacMillan writes as follows:— It was found in Rensselaer Bay in one of the very numerous old igloos dotting the whole coast line from Etah 78° 20′ to the southern edge of the Humboldt Glacier, 79° 10′. This knife was brought to me by an Eskimo by the name of Myah, who found it in August, 1916. Both cutting edges of flint were with the handle. How the knife was used I do not know. I have drawings of other old knives, as described by the older men of the tribe, but all with numerous teeth, some of which overlapped.

[2] Wissler, this series, vol. 14, part 2, Fig. 3bcd, 407.

[3] Boas, *ibid.*, 484; Thalbitzer, *ibid.*, 490.

Captain Comer found in an old house ruin near Etah a number of objects among which was Fig. 6f. This is a rather curious fragment of what seems to have been a knife, for the haft is almost circular in cross-section instead of flat and knife-like, as in the specimens previously described. Yet, on one edge of the fragment are two pockets similar to those described, in one of which there remains a fragment of iron. The groove resembles that of the preceding in its regularity and is again approximately 2 mm. wide. Another curious feature is that the grooves do not run exactly parallel to the fragment and there is also a small pocket cut to one side of the others, suggesting an error in workmanship. The fragment of iron shows indications of crude beating, but its appearance does not suggest meteoric iron. In fact, Professor R. W. Tower of the Museum staff tested it for nickle without result.

Again, at the same place Captain Comer picked up a small piece of antler in the end of which had been driven the section of a knife blade (60.1–4617). Of course, there is no way of knowing whether this specimen is more recent or even contemporaneous with Fig. 6f. The amount of weathering of the two bones is about the same. It is, however, obvious that the maker of the specimen 60.1–4617, had access to trade knives.

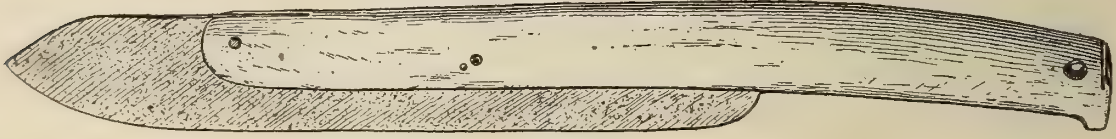

Fig. 9 (60.1–5064). A Knife of Recent Make with Blade of Hoop-Iron. Length, 31 cm.

Near Sunrise Point Captain Comer found in a house ruin, among other objects, a fragment somewhat similar to Fig. 6f. The pockets in this specimen are rather deep but are otherwise not different from Fig. 6f. Yet, no traces of metal were observed. In the same ruin a number of stone chips were found, none of which, however, suggest their use in knives of this sort.

At various places in the vicinity of Etah Mr. MacMillan found fragments of knife handles, some grooved on one side and some on both, but in every case the grooves were without pockets, narrow and straight, suggesting the use of long strips of iron or steel knife blades for the cutting edges. In other words, they resemble, in every particular, recent Eskimo knives such as may still be seen in collections (Fig. 9).

At this point it may be worth examining the few examples of chipped stone returned by the collectors to see if any of the objects could have served as blades for knives similar to Fig. 8.

As previously stated, there was very little stone from Comer's Midden. However, there were three flint chips indicating that at least some chipping had been done there. From the vicinity of Etah twelve sites returned some examples of chipping though these were usually confined to one or two chips. Captain Comer found, July 29th, 1917, while digging in a house ruin near Sunrise Point, a small cache of flint chips on the left side of what was the passageway to the house. There are, in all, something over a double handful of these chips, but they are simply flakes struck off evidently in the making of stone implements. There are but three pieces in the lot that show fine surface chipping. Among these are flakes struck off in re-shaping a large tool of some sort. The surface chipping is particularly fine and regular. Of the entire series of fragments from the other sites, not over a large handful in all, we find no piece that seems at all suitable for insertion in a knife, with one possible exception. Fig. 10e was found in a house ruin at Etah and may be a part of a broken lance head, but is also of such a shape that it could be set in the pocket of a bone knife similar to Fig. 8.

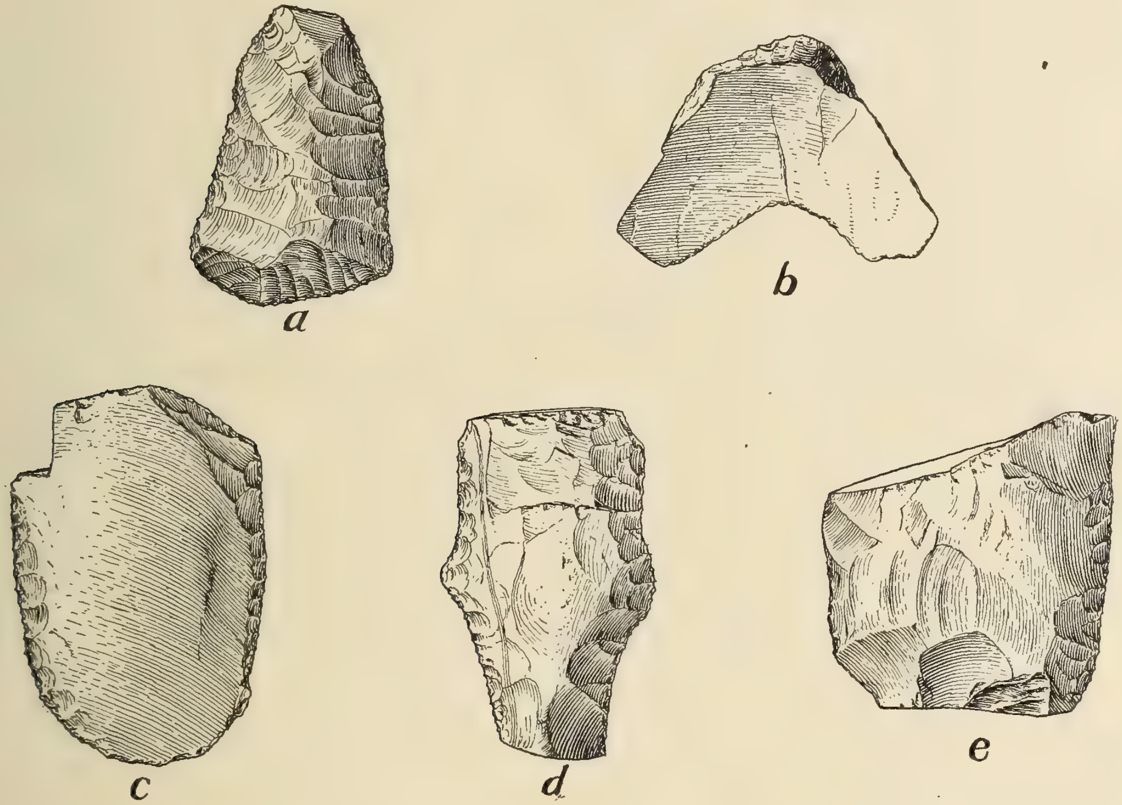

Fig. 10 (60.1–4734, 4597, 4650, 4622, 4639). Chipped Flints from Etah. Length of *a*, 2.4 cm.

The only other cases of chipping deserving mention are shown in Figs. 10 and 13. Fig. 10a is evidently the blade for a small scraper; Fig. 10b has the appearance of a spoke shave, though this may be accidental; Fig. 10c is a carefully shaped object which we have been unable to identify; and Fig. 10d which is apparently part of a drill.

One peculiarity of the knives from Comer's Midden is the absence of the type from Greenland well illustrated by Thomsen.[1] This type has a long slender bone handle with a groove cut on one side near the end for the insertion of a blade. As has been remarked by writers upon the subject, this type of knife is a prototype of the stone knife formed by placing a small stone blade near the end of a handle, such as may be seen in Alaskan collections illustrated by Murdoch.[2] Knife handles of the type described by Thomsen, referred to above, were found at various sites in the vicinity of Etah. All of them are so grooved as to indicate the use of metal blades. It is, however, not clear why this type of knife is absent in the collections from Comer's Midden; yet, it may be remarked that there is one incomplete handle, much weathered, near the end of which there is a very narrow shallow slot or groove about 2 cm. long and slightly less than 1 mm. in width. The form of this thus suggests that it was originally the handle for some other kind of implement and that this groove was made here in secondary working of some kind. As it has only the vaguest resemblance to the knife referred to above, it cannot be considered as a *bona fide* example.

We do, however, find objects indicating the use of somewhat similar knives. Fig. 11a may be taken as the type. As will be observed, the knife blade was inserted in the end by a tang and the portion of the handle that remained was so grooved as to suggest a wrapping or binding such as may be observed upon the knives in Eskimo collections. There is a deep hole in the end of this handle in the bottom of which we found a small metal fragment surrounded by a curious bluish stain, suggesting copper, but the fragment proved to be iron. It is thus clear that this is the handle of a metal knife and one may assume that it had a large blade somewhat similar to knives from Hudson Bay figured by Boas.[3] Since such a knife could not well be made of native iron, we assume this blade to have been of commercial iron.

Altogether there are seven handles of this type from Comer's Midden. One of these has the remains of a sinew cord in the handle hole. All have deep sockets in the end for tangs similar to that of the figured specimen. The form and depth of these sockets suggest similar metal blades. It is true that we have a knife of frequent occurrence in Greenland collections and also extensively in the Stefánsson collections from Alaska, which carried a short stubby stone blade. A large series of handles from Point Hope and Point Barrow shows forms strikingly like the handles from Comer's Midden, but in most cases these were intended for stone blades, the sockets being much more shallow and of a different shape. We also have from the same Alaskan sites a number of specimens with the stone blades still in place. A comparison of these with the handles from Comer's Midden leaves us no other conclusion than that the latter handles were all fitted with metal blades.

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[1] Thomsen, Thomas, "Implements and Artefacts of the North-East Greenlanders Finds from Graves and Settlements" (*Danmark-Ekspeditionen til Grønlands, Nordostkyst, 1906–1908, Meddelelser om Grønland*, vol. 44, Copenhagen, 1917), Fig. 26, 429.

[2] *ibid.*, 160, Fig. 117.

[3] Boas, *ibid.*, Fig. 202, 404.

From another site at North Star Bay Captain Comer picked up a handle in every way similar to Fig. 11a. There are curious greenish stains on this specimen and another from the same site, suggesting copper, but no piece of metal remains.

There are two other objects from Comer's Midden which seem to have been intended for knife handles. These are longer than the specimens just described being in fact long enough for two-handled knives such as have been described for the Eskimo further west. One of these handles is shown in Fig. 16a. There is a shallow groove across the end apparently for the insertion of the knife blade. There are, however, no rivet holes, suggesting that this handle was never completed. The other specimen is similar to this except that it bears a rivet hole but is not figured because of its fragmentary condition. A comparison of these with knife handles from Hudson Bay and elsewhere indicates that these are most likely handles for a large two-handed knife. So far as I know, this type has not heretofore been observed in Greenland.

No handles of this type were returned from any other site except a possible specimen from the vicinity of Etah. This is, however, in such a fragmentary condition that it is impossible to determine its precise character and it may therefore be passed as doubtful.

The only other object from Comer's Midden suggesting a knife handle is the fragment shown in Fig. 11c. Somewhat similar forms, as for example, Fig. 11b, were picked up at several sites near Etah. The above is, however, the only example of such a handle from Comer's Midden.

From another site on North Star Bay comes a knife handle, much weathered and decayed. Its form is clearly indicated in Fig. 11d. It has a deep groove in the edge at the end, indicating the insertion of a blade and certain green stains about this aperture suggest copper. The handle end has been grooved as if for attaching a cord.

In general, then, it may be said that practically all the knives from these sites in West Greenland belong to the metal-using period of Eskimo culture.

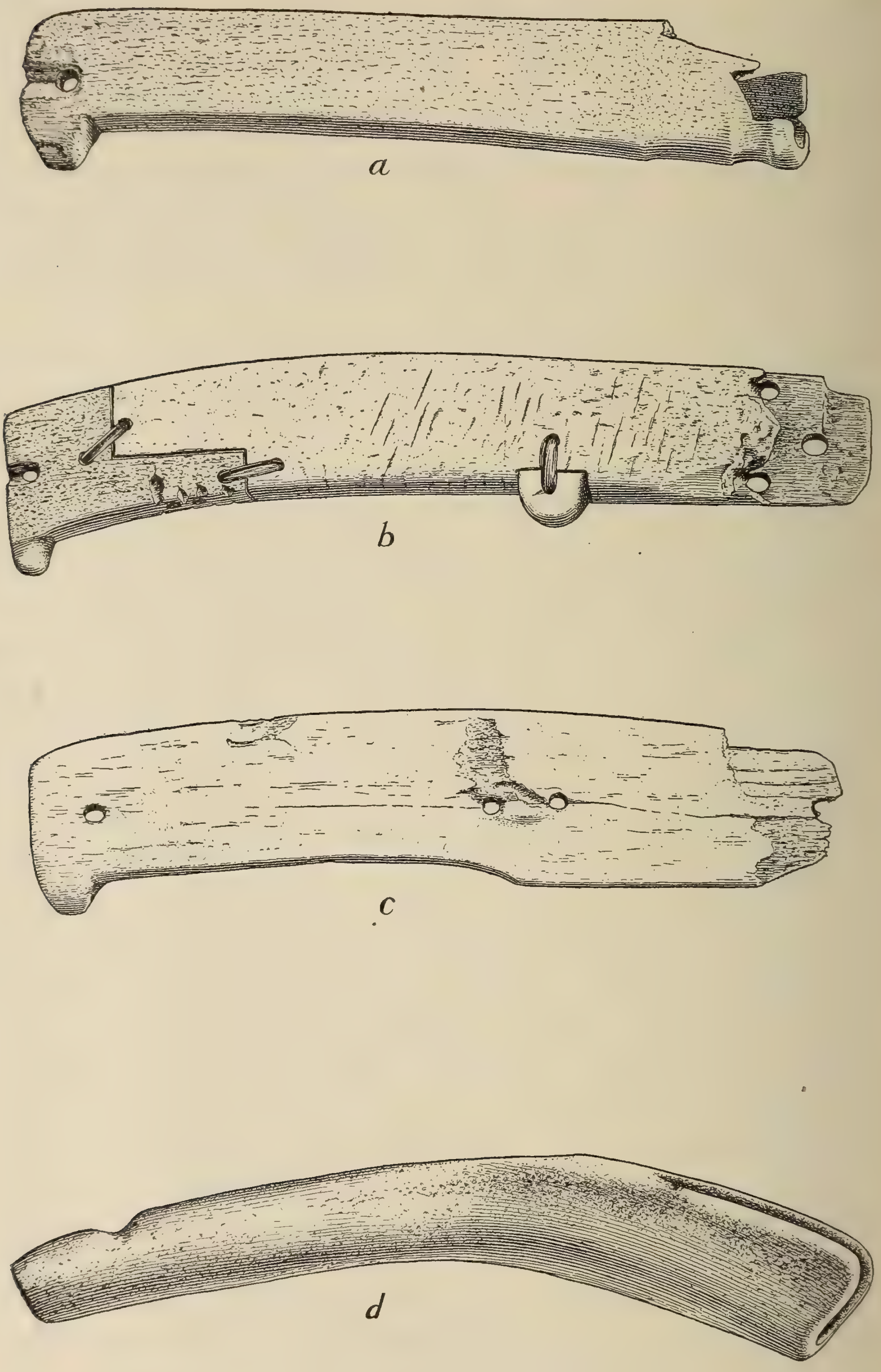

Fig. 11 (60.1–4404a, 4633, 4404b, 4515). Knife Handles: *a*, Comer's Midden; *b*, Etah; *c*, Comer's Midden; *d*, North Star Bay. Length of *a*, 12.3 cm.

The significance of this has been discussed at length by Thalbitzer[1] and by Solberg[2] and more recently by Thomsen.[3] From these discussions it seems that the only example of the old Eskimo stone knife similar to the type specimen described by Boas from Southampton Island (Fig. 5) is the one shown in our Fig. 8. The Museum at Copenhagen seems to possess several examples of knife hafts similar to our Fig. 6 but none of these indicates the use of a stone blade. We have previously mentioned the possibility of meteoric iron having been employed for the blades of such knives. The investigation of Danish students has shown, however,[4] that most of the early iron knives used by the Eskimo in West Greenland were made from native telluric iron and not meteoric. As to the use of telluric iron we shall have more to add later. It has been assumed therefore, that the Eskimo iron culture of West Greenland is very old and possibly even older than the period of European contact. The assumption is that the pocketed haft of the type shown in Fig. 6 is a literal copy of the older stone knife shown in our Fig. 5. It would follow, therefore, that the old and original type of Eskimo knife for both the Hudson Bay region and West Greenland was one having an edge formed of small chipped pieces of stone set in a row. This gives us a kind of chronology for West Greenland in that the sites showing iron knives of the type of Fig. 6 are almost contemporary with sites on Hudson Bay yielding stone knives of similar pattern. Further, we may assume that the knife formed by a long narrow blade of iron set in a groove is a later type, possibly, as has been suggested, a direct copy from European trade knives. Hence, we may assume that all sites returning knives of this character belong to the historic period. If this assumption is justifiable it appears that at least the lower strata of the site at Comer's Midden belong to the earliest period of Eskimo occupation in West Greenland and are certainly older than many of the sites examined in the vicinity of Etah. Nevertheless, there were certain sites at Etah, particularly the one yielding the specimen shown in Fig. 6f and the one from Rensselaer Harbor, giving us so far the only known example of a stone-edged knife of this type. As to whether there was a still older culture in West Greenland properly designated as a stone age culture, we need not discuss at present. Suffice it to say that no evidences of such a period of occupation were brought to light by the archaeological work of this Expedition.

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[1] Thalbitzer, *ibid.*, 488–490.

[2] Solberg, O., "Beiträge zur Vorgeschichte der Ost-Eskimo" (*Videnskabs-Selskabets Skrifter*, II, Hist.-Filos. Klasse, Christiana, 1907), 53–54.

[3] Thomsen, *ibid.*, 424–434.

[4] Thomsen, *ibid.*, 432.

ULU OR WOMAN'S KNIFE.

As previously stated, few stone objects were found in Comer's Midden.[1] Altogether there were just nine pieces, some of which have already been referred to (p. 127). The others are shown in Figs. 12–14. Of these Figs. 12ab are undoubtedly ulus, and of particular interest because they seem to have been used without an additional haft, though from the roughness of the edge it must be inferred that some kind of binding or other hafting was used. The cutting edges have been carefully ground and in the case of Fig. 12a, to a remarkable keenness. Fig. 14 is evidently the blade for a small ulu-like knife, tapering at the top to form a tang for insertion in the handle.

Fig. 13a is a curious fractured form having what seems to be a broad cutting edge. This may be an accidental chipping, but the edge shows some signs of wear from use. Fig. 13b is still more curious. It reminds one of certain paleolithic types, in fact, the *coup de poing*. Its sharp chisel-like edge shows some indication of wear. The top of the object seems to have been broken away. The function of this implement, if implement it is, can, of course only be conjectured.

Among the bone objects were thirteen ulu handles of various forms. The prevailing type is shown in Fig. 15a and a slight variation of the same in Fig. 15b. The interesting thing about all these handles is that they have a very deep but narrow slot suggesting the use of a metal blade. There is, in fact, but one in the whole lot which has a slot of a form suggesting a stone blade. In this case, we cannot be sure, however, for the specimen seems to have warped slightly, which may account for a certain amount of distortion

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[1] Note on the Stone Implements and Chips in the Crocker Land Expedition Collection, by Dr. E. O. Hovey.— The few stone implements and artificial chips recovered from Captain Comer's midden at Oo-ma-nahq near North Star Bay are bits of slate or flakes of trap rock (diabase) from the vicinity, aside from one knife point worked from a chip of chalcedony. Chalcedony was collected by Mr. Elmer Ekblaw, geologist of the Crocker Land Expedition, from cavities in the ancient igneous rocks of McCormick Bay and it is not unknown elsewhere along the coast.

True flint artifacts and flakes were found in the refuse heap excavated by Captain Comer near Littleton Island. These resemble the flint of England so closely that it seems most probable that the material was brought to the north water of Baffin Bay by the whalers who frequented the region in the years following Captain Ross's visit. Magister M. P. Porsild, chief of the scientific station at Godhavn, Island of Disko, has obtained from the Greenlanders of Danish Greenland fragments of flint that were brought to their Eskimo ancestors by English whalers for use in the flintlock guns that were utilized in trading in former days. Such flints are reported to be common in the more recent kitchen middens of that part of the coast.

Flint, or chert, is probably rare along the coast from Cape York to Smith Sound. Neither Mr. Ekblaw nor I saw any there, but the Eskimo told the former that it occurred at McCormick Bay and in the limestone beds of Northumberland Island.

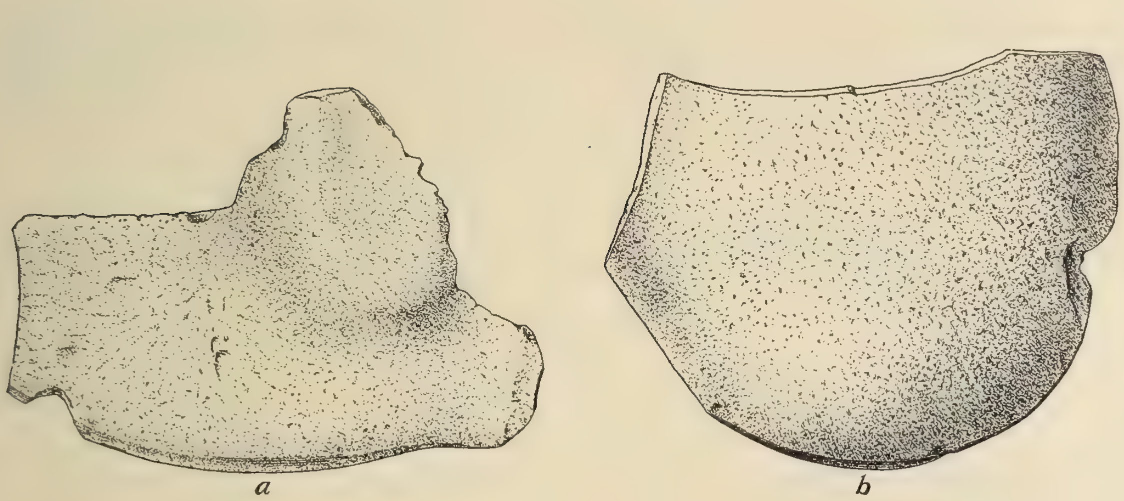

Fig. 12 (60.1–4402a–b). Stone Ulus, made from Local Diabase. Length of *a*, 13 cm.

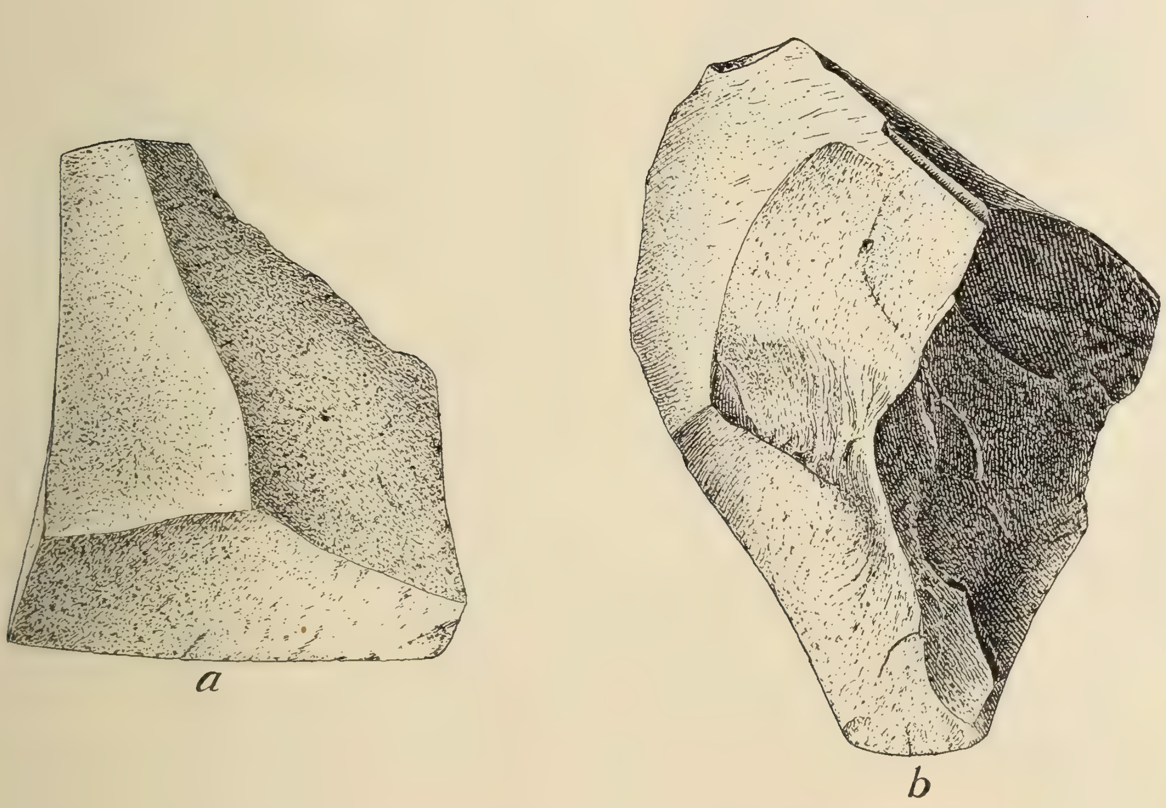

Fig. 13 (60.1–4402d–e). Chipped Stones: *a*, Slate; *b*, Diabase. Length of *a*, 6 cm.

in the shape of the slot. It is not clear, therefore, what may be the relation between these evidences of iron-bladed ulus and the more primitive stone ulus just described. Of course, several explanations suggest themselves. As for instance, the mere accidental use of stone implements in case of need and again that they are some of the last survivals of the period in which all such knives were stone. These, however, are purely speculative.

A curious type of handle is shown in Fig. 16c. The specimen is in a very fragile condition, but it seems to have had a blade inserted in a groove at its lower edge, suggesting a ulu. On the other hand, the purpose of the extension to the handle is not quite clear. There is a suspicion of a groove in the end of this extension, but as to that we cannot be certain. There is a small wooden object (Fig. 16b) which reminds one of certain modern ulu handles. Though the object here is but a toy, nevertheless it must be taken as positive evidence that the conception of this type of ulu handle was in the mind of the maker.

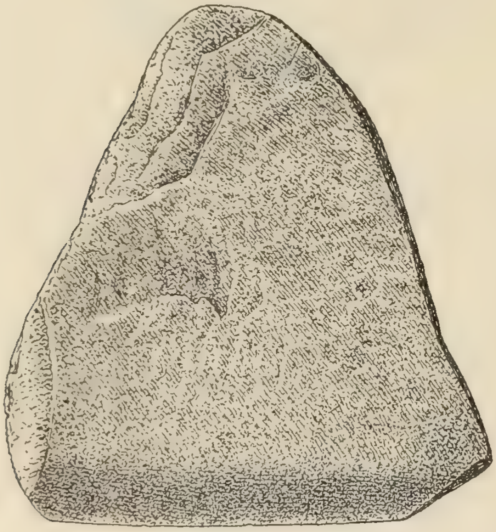

Fig. 14 (60.1–4402c). Part of Ulu Blade, Slate. Length, 6.5 cm.

Finally, we have a singular haft in Fig. 15c the significance of which is not clear. It is a piece of antler, following somewhat the natural contour of the material, but nevertheless so shaped as to suggest its being held in the hand by the thumb and index finger on one side and the three fingers on the other. The peculiar curved notch in the end shows a high polish from wear, as if the index finger were held there in use. On the other hand, the extended end of the instrument is sharpened almost to a chisel edge and this also shows signs of wear. A large section of the lower edge has been cut with a deep groove for the insertion of a blade. This is about 8 cm. in length and has an average width of 3 mm. This again suggests an iron blade of some sort, but what may have been the function of this peculiar implement we are unable to suggest.

A number of ulu handles were picked up at other sites visited by the Expedition, but none of them present important differences from those described here or elsewhere. We do miss in Comer's Midden the ulu handle made of two pieces, a form described by Boas from Southampton Island[1]

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[1] Boas, *ibid.*, 430, Fig. 231; also Kroeber, A. L., "The Eskimo of Smith Sound" (*Bulletin, American Museum of Natural History*, vol. 12, art. 21, 1900), Fig. 28.

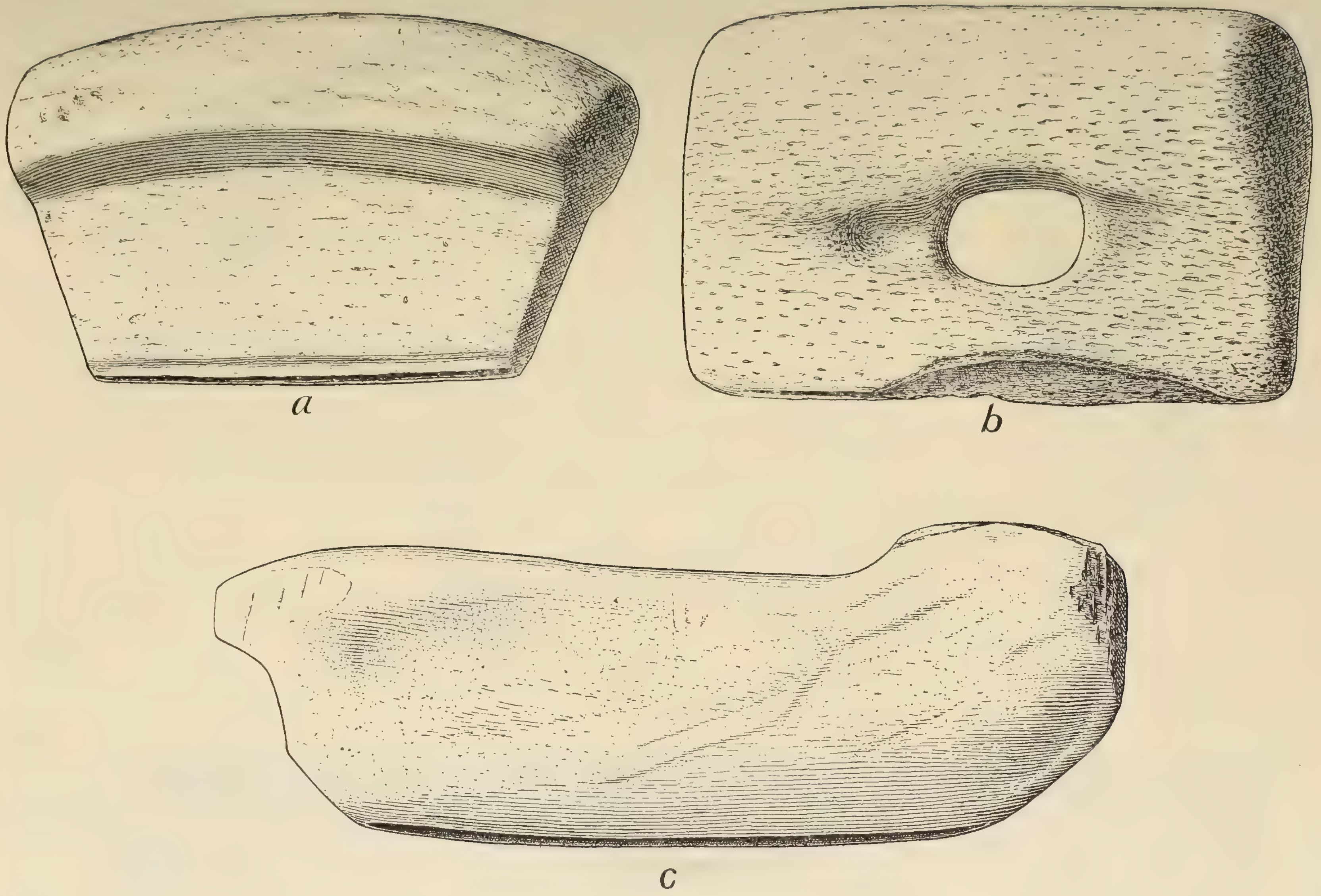

Fig. 15 (60.1–4405a–c). Ulu Handles. Length of *a*, 9 cm.

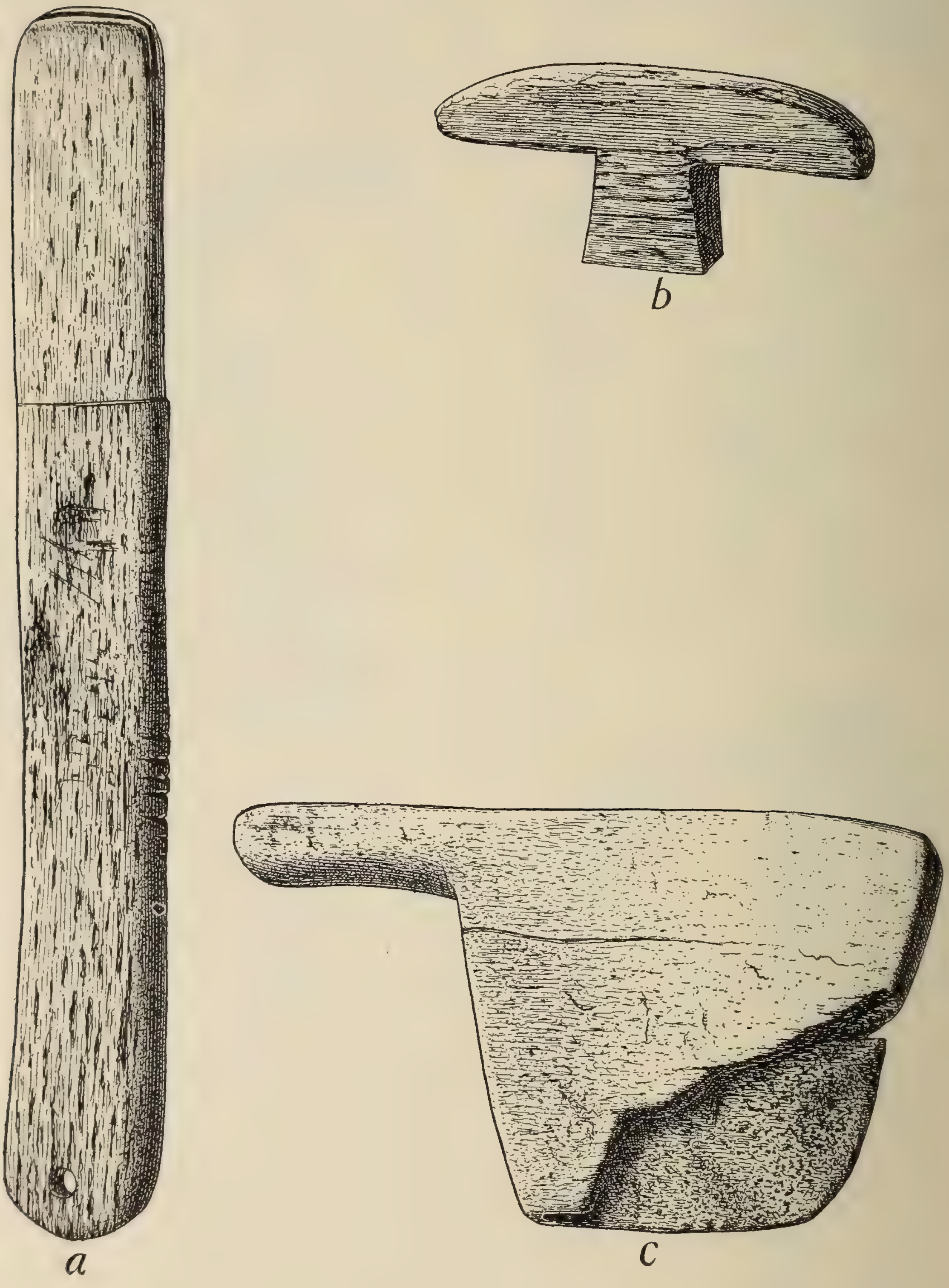

Fig. 16 (60.1–4480, 4405d, 4405e). Ulu and other Knife Handles. Length of *a*, 17 cm.

in which the heavy ridged handle, as in our Fig. 15a, is a separate piece and attached to the lower more slender shaft by thongs. Parts of such specimens were found at several sites in the vicinity of Etah, and at Parker Snow Bay, but none, as stated before, were found in Comer's Midden.

We frequently see in Eskimo collections a type of woman's knife figured by Porsild [1] which has a metal blade with a long narrow tang to the top of which is attached a cylindrical piece of ivory or bone. No such pieces of ivory or bone were found in any of our sites. However, there are some modern examples of metal knives picked up from the surface having such handles. One may suspect, therefore, that this type is particularly recent in West Greenland.

WHETSTONES.

Two pieces of sandstone regularly cut and rectangular in cross-section were found. Both had rubbed surfaces as if used for whetting metal tools.

SPOKE SHAVES.

From Comer's Midden we have one specimen (60.1–4409) which may be characterized as a spoke shave. What we have, as in other cases, is simply a haft minus the blade. This piece is of antler about 12 cm. in length and slightly curved. In the middle of one edge is a very narrow slot about 3 cm. long, presumably for a metal blade. This object is particularly well-preserved and comes apparently from the surface.

SNOW KNIVES.

Comer's Midden returned a large series of snow knives, though most of them are broken. Such knives have been thoroughly discussed by Thomsen.[2] It appears from this discussion that such knives have not heretofore been returned from West Greenland, though since they occur around Hudson Bay and Cumberland Sound as well as in East Greenland, their present appearance in Northwest Greenland was to be expected. All those from Comer's Midden seem to be of a slightly different type from those found in

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[1] Porsild, Morten P., "Studies on the Material Culture of the Eskimo in West Greenland" (*Meddelelser om Grønland*, vol. 51, Copenhagen, 1915), 212, Fig. 47.

[2] Thomsen, *ibid.*, 421–424.

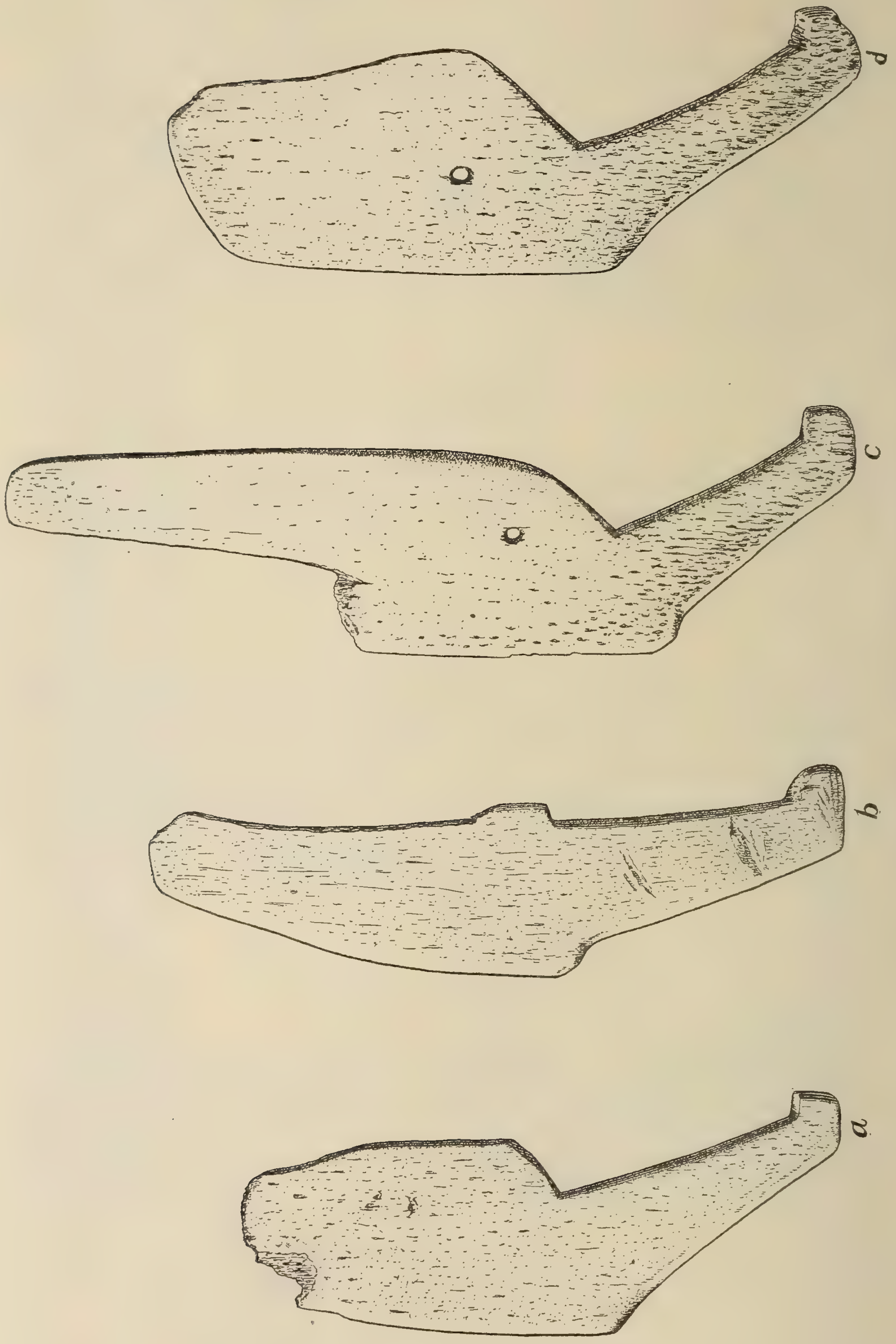

Fig. 17 (60.1–4403a–d). Snow Knives. Length of *a*, 18.5 cm.

East Greenland. The difference is chiefly in the prominence of the upper shoulder or guard which is a notch similar to the lower shoulder in East Greenland snow knives, but, as will be seen from the illustration of specimens from Comer's Midden, the upper part is usually formed by a sharp curve in the handle. Two of the knives, however, as in Fig. 18a, have a small prominence on the back to serve as a guard. Yet, with these slight variations, we have in Comer's Midden both types of knives described by Thomsen as characteristic of East Greenland. As previously stated, fragments of such knives were more frequent in Comer's Midden than any other object. The fragments consisted of knobbed ends of handles, slivers and pieces of blades. All are of bone and some show exceedingly fine workmanship. There are a few fragments of bone blades so nicely made and with such keen edges that their mere use for snow knives may be questioned.

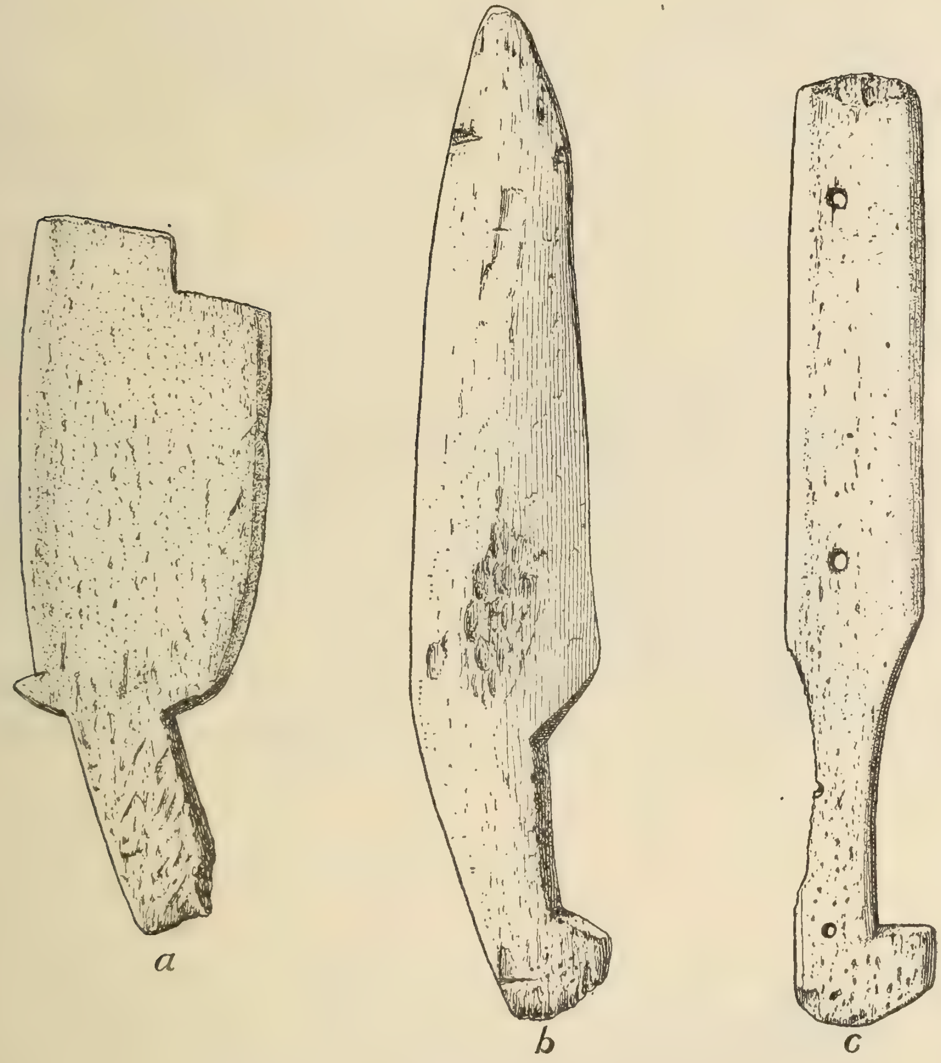

Fig. 18 (60.1–4403e–g). Snow Knives. Length of *a*, 18 cm.

But since they are of the same material and since no other handles were found which seem to fit them, we may assume that they are parts of blades for knives of similar shape, if not actually parts of snow knives.

As stated by Thomsen a simple straight knife of ivory is frequently used as an ice scraper for kayaks, both in Greenland and elsewhere. No ivory knives were found in Comer's Midden, for, as stated elsewhere, ivory was exceedingly rare, but part of a bone knife was recovered which suggests this form (Fig. 18c). That the prevailing type of snow knife was not peculiar to Comer's Midden was indicated by a precisely similar specimen from another site on North Star Bay. Again, from the sites at Etah we have several good examples of such knives. So far as their completeness permits, these are of the type of Fig. 17. All are of bone and greatly weathered, as if of considerable age. Of more frequent occurrence at the Etah sites is another type made of ivory, bone, and antler. This is long, slender, and sword-shaped.[1] All are new, showing little or no weathering. This type does not appear in Comer's Midden, though there is a single fragment of antler suggesting such a blade. However, this being the only possible example as opposed to the great number of the other type, the above noted difference still stands.

It seems, therefore, that the type of snow knife from Comer's Midden has slight individualities of its own, but is otherwise strictly comparable to those from East Greenland and Hudson Bay. Hence, they belong to the older substratum of Eskimo culture and presumably to the earliest period of occupation of Comer's Midden and the Smith Sound district generally, being contemporaneous with the old type of iron-bladed knife previously described.

THE ADZE.

It is now clear that we are justified in assuming that the site known as Comer's Midden was occupied as early as any yet known in Northwest Greenland. Hence, a full description of the collection made by Captain Comer is necessary. Unless otherwise stated, all the succeeding references to specimens will be from that site.

First, we may note that five adze heads were secured, three of which are shown here (Fig. 19). Those figured have rather large sockets suggesting stone blades, but there is another that must have carried a thin metal blade. As may be inferred from previous statements, no pieces of stone suitable for these hafts were found, but there is nothing in the forms of the figured specimens to preclude the use of such stone blades. The forms of these adze hafts are quite uniform with those of East Greenland and again with those

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[1] Kroeber, *ibid.*, Fig. 2.

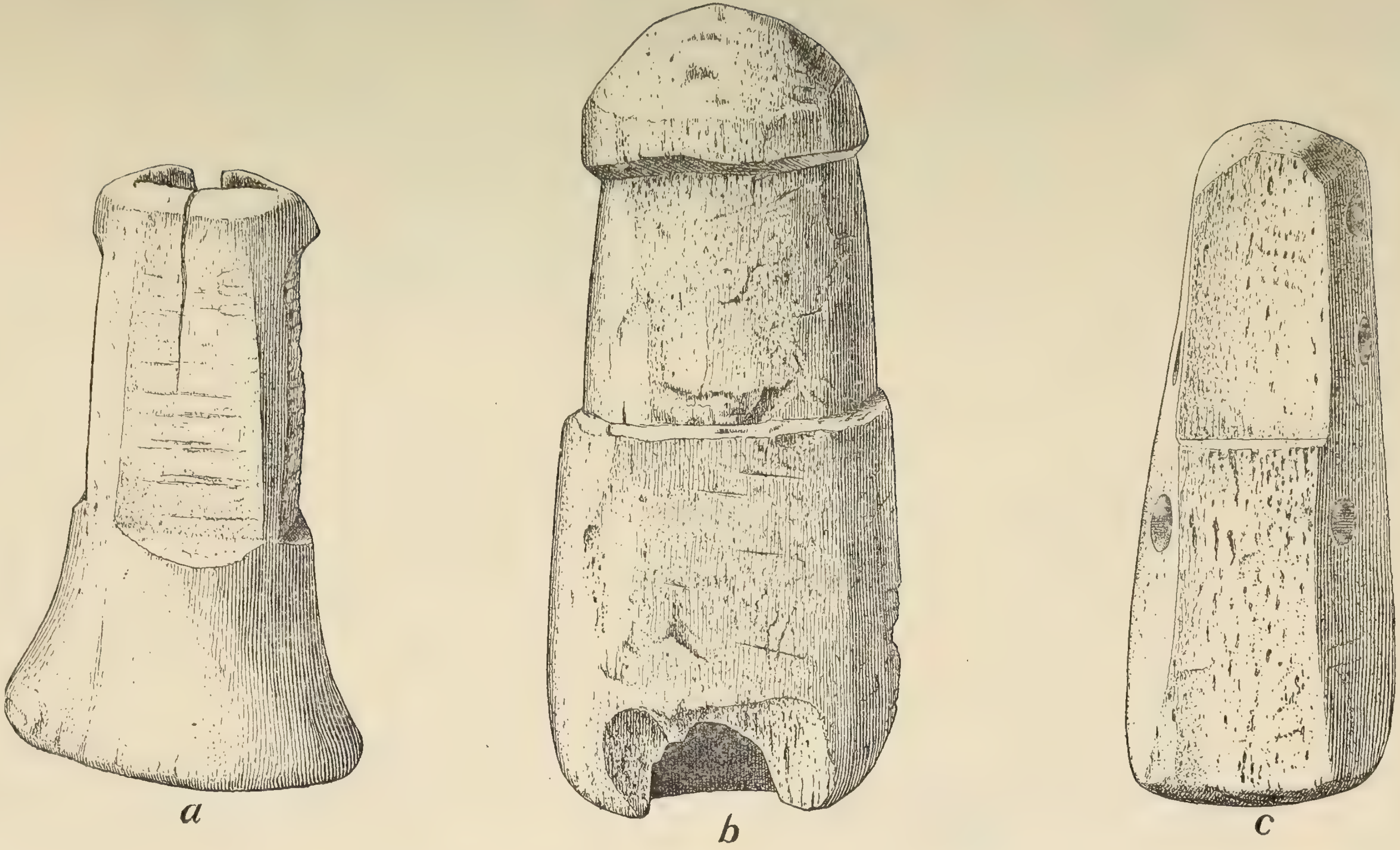

Fig. 19 (60.1–4392a–c). Adze Heads. Length of *a*, 8 cm.

of Alaska.[1] Fig. 19c has three lateral holes for the binding cords and Fig. 19a reminds one of Solberg's type.[2] Fig. 19c is also precisely like a Baffin Land piece.[3]

No adze heads were found at the other sites visited.

ICE PICKS.

To the butt end of a harpoon or lance shaft is usually attached a sharpened piece of bone or antler for breaking ice when necessary. A number of these were collected. All were joined to the shaft by a plain bevelled splice and two had holes through them as if for securing by lines. Similar objects have been noted for East Greenland and in fact all the Eskimo.[4]

HAMMERS.

From many of the sites about Etah we have hammers made of antler, all in one piece, the hammer head being a large shaft and the handle a section of a tine. All of these show very little weathering and are therefore presumably recent. Now, though there is an abundance of worked antler in the collections from Comer's Midden, there are no examples of such hammers either complete or in fragments. On the other hand, we have the object shown in Fig. 20a, the ends of which show indications of use as a pounder. Its most interesting feature, however, is the series of perforations. From front to back is a large one measuring 6 cm. at the back and 4 cm. at the front in vertical section. Horizontally, it varies from 2 cm. at the back to one cm. at the front. From the size of this opening we assume that a handle was inserted. From the dimensions given it will be seen that the handle would have a wedge-shaped end similar to hafts used in our own tools. In addition to this perforation, there is a small lateral one passing from side to side through the middle of the larger. This has been formed by two drill holes, side by side, giving a perforation about 15 mm. by 8 mm. If we are correct in our assumption that a handle was inserted in the large perforation, then the smaller one is for the insertion of a pin or a lashing of some kind to hold the head of the hammer to its handle. While this may be an entirely erroneous interpretation of the specimen, its form, markings, etc., certainly suggest such use.

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[1] Thalbitzer, William, "Ethnological Description of the Amdrup Collection from East Greenland" (*Meddelelser om Grønland*, vol. 28, Copenhagen, 1909), 448.

[2] Solberg, *ibid.*, Plate 7.

[3] Boas, *ibid.*, 381, Fig. 175a.

[4] Thomsen, *ibid.*, 393.

MATTOCKS.

A conspicuous object in the collection is the large heavy bone mattock with notched edges for lashing to a handle, a type familiar in collections from Hudson Bay and Alaska. All of the specimens found here are precisely similar to those from the older sites in Southampton Island figured by Boas.[1] Further description is, therefore, unnecessary. Similar mattocks were

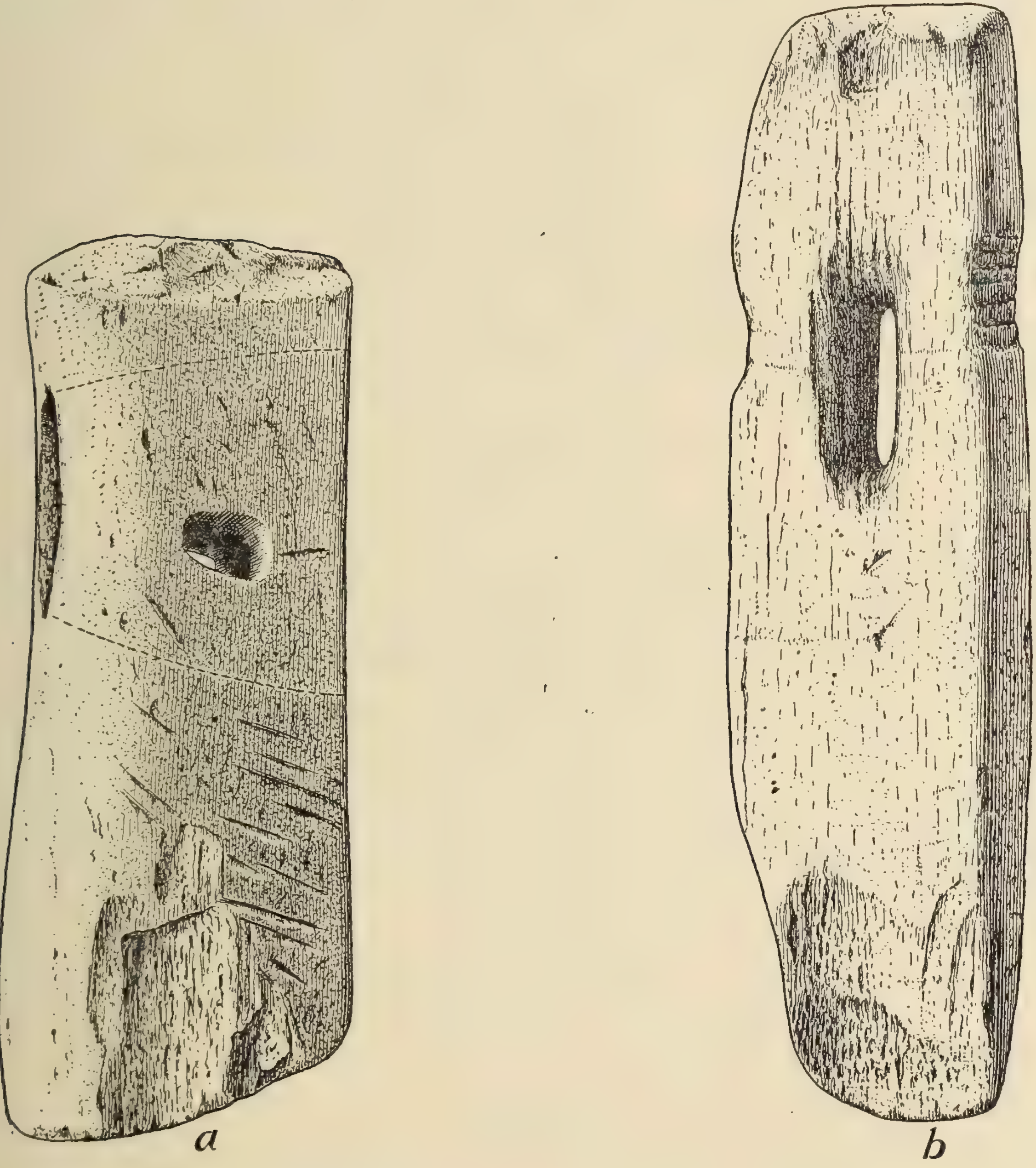

Fig. 20 (60.1–4393, 4395). A Maul Head and a Mattock. Length of *a*, 15 cm.

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[1] Boas, *ibid.*, 416, Fig. 214.

found at several of the sites in the vicinity of Etah. This fact, taken with the general wide distribution of this type to the west, indicates that it is one of the old and fundamental traits of Eskimo culture.

There are, however, three pieces in the collection resembling the mattocks just described, except that they are shorter and bear, near the hafted end, a perforation large enough to take a handle. One of these is shown in Fig. 20b. As may be seen from the drawing there are two slight notches on each side opposite the perforation, as if for lashing. In fact, there is a slight groove on the surface of the specimen passing from these notches into the perforation and out, precisely like one should expect from the long wear of the lashing. The manner of attaching this mattock or ax blade, as the case may be, is not clear. The form of the perforation leads one to doubt that the handle was inserted according to the European method while the tracings of lashing suggest that the perforation is merely for the sake of inserting the binding elements. However, this does not dispose of the case, which must be set down as one of the problems of the future.

SLEDGES.

We find in the collection one cross tree for a sledge, similar to specimens figured by Boas,[1] and several fragments of bone sled shoes. One of these is more than 40 cm. in length. All have the usual holes for attaching and one piece contains a number of wooden pegs still in place. The form, manner of drilling, etc., in these shoes does not differ from that described for Greenland sledges.[2] The materials in this case are bone. No ivory shoes were found in contrast to the collections from the other sites. Practically every site in the vicinity of Etah returned ivory sled shoes. These are of different pattern, varying from ten to twenty centimeters in length and joined one to the other by a pair of countersunk holes. All seem to be of recent manufacture. The inference is, therefore, that the type of sled used by the people of Comer's Midden, is the older West Greenland type, also found in East Greenland.

TOGGLES.

Toggles of the type used in dog harness were fairly numerous. The older, more weathered, specimens were of bone; the newer looking ones of ivory. There is nothing about them that is distinctive.

No swivels were observed such as are found around Hudson Bay.

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[1] Boas, Franz, "The Eskimo of Baffin Land and Hudson Bay" (*Bulletin, American Museum of Natural History*, vol. 15, part 1, 1901), 38, Fig. 47.

[2] Thomsen, *ibid.*, 412–417.

KAYAKS

No parts of kayak frames or paddles were found, but there are a number of bone objects which seem to have served as paddle tips. Fig. 21 may be taken as the type. They vary in size from 8 to $1\frac{1}{2}$ cm. Several, including the smallest one, contained fragments of the wood to which they were attached. Thalbitzer,[1] illustrates the "model of an old-fashioned kayak paddle" which bears tips similar to the above. No such objects were found at the other sites.

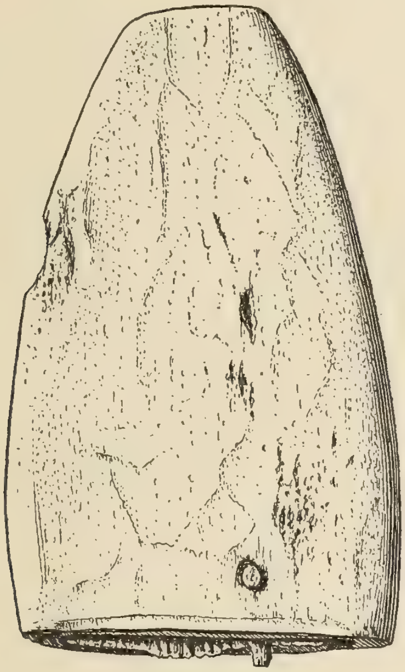

Fig. 21 (60.1–4407). Tip for a Kayak Paddle. Length of *a*, 8 cm.

BOWS AND ARROWS.

No indications of bows were observed, except one doubtful fragment of bone which resembles a part of one of the plates in a compound bow. On the other hand, arrows are in evidence. First, as to arrow-heads, it may be stated that no metal or stone heads were found, nor do any of the foreshafts show signs of having carried such points. All of the heads found are of antler or bone and complete in themselves. All have pointed tangs for insertion in the shaft bearing lateral spurs in pairs, but not placed opposite each other. As stated by Porsild and others, arrow-heads of this type from

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[1] Thalbitzer, *Amassalik Eskimo*, 386, Fig. 91.

West and South Greenland often bear threads for screwing into the shaft. The Danish school of ethnologists have assumed that the lateral spurs occurring on the other specimens found in Greenland are rudiments of this same screw thread. It seems, however, more likely that the screw thread is a modern innovation suggested probably by European models, while since we find the spurs distributed entirely across the continent to Alaska we may assume this to be the older form and that it is not necessarily related to the threaded tang.[1]

As to form, the bone heads from this collection resemble the two main Greenland types as enumerated by Thomsen [2] one with a long oval blade, the other with a single barb at one side. Though on Greenland heads of this character there are often several barbs, all the specimens from this site have but one. No indications of property marks, such as are numerous on Western Eskimo specimens, came to notice. There were, however, one or two slight attempts at decoration by incised lines.

Blunt heads for bird arrows were rather numerous, made both of wood and bone. Some were rather large and heavy. Since in almost every case the tangs or other attachments have been broken away, it is not clear how they were fastened to the shaft. There is, however, one complete specimen which indicates that the method was by splicing, a trait quite characteristic of Hudson Bay. This point is of some interest since when the Smith Sound Eskimo were met by Ross in 1818, the bow and arrow were absent, but are known to have been introduced later by Cumberland Sound Eskimo whence their use was common for a short period. According to Thomsen, all the arrow-heads of this period were joined to the shaft by the oblique form of splicing, which is, of course, the method employed by the Eskimo of Cumberland Sound and Hudson Bay.

It is interesting to note that our collections from the vicinity of Etah contain few arrow-heads and such as there are have been spliced in the above manner. One may infer, therefore, that they belong to this period of recent contact with the Western Eskimo. Hence, the arrow-heads from Comer's Midden and North Star Bay belong to a period when such implements were in use in Northwest Greenland. Further, since something of the same kind occurs in the old collections from Northeast Greenland and it is the form of arrow-head distributed from Hudson Bay to Alaska, and is also not entirely absent from collections around Hudson Bay and Cumberland Sound, we must consider its presence in Comer's Midden an indication that the people occupying this site belonged to the older period of Greenland history.

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[1] Porsild, Morten P., "The Principle of the Screw in the Technique of the Eskimo" (*American Anthropologist*, N. S. vol. 17, no. 1, 1915); Laufer, Berthold, "The Eskimo Screw as a Culture-Historical Problem" (*American Anthropologist*, N. S., vol. 17, no. 2, 1915).

[2] Thomsen, *ibid.*, 404–405.

In this connection it may be noted that there is one bone head for a metal blade which has the form of a figure in Thalbitzer.[1] It is very large for an arrow as is the one cited above.

Bird and Fish Spears.

A number of barbed pieces of various sizes, made of bone and antler, such as are used on bird spears and fish spears, were found. There is nothing about them that differs in any particular from those already described for Greenland and elsewhere. There are, however, two kinds of objects in the collection, all made of wood, which suggest a use as barbs for some kind of spear, but which we have not yet been able to identify. One of these is shown in Fig. 22. Precisely similar specimens were picked up at various places on the shore of North Star Bay and others from old house sites near Etah. They average about 6 cm. in length. In each case a portion of the base has been mortised out so as to form a shoulder, apparently for some kind of mounting. The remainder is notched as if for a binding cord. No objects of this kind have come to our attention, but they remind us of objects figured by Boas[2] which though of bone are of approximately the same size and of somewhat the same form. Professor Boas was unable to find any explanation for these, but Waterman[3] found in a later collection from old house sites at Lyons Inlet, Hudson Bay, made by Comer in 1910, the mountings for these barbs, suggesting that they were in fact barbs for fish spears. As such, they differ radically from the barbs upon fish spears found in collections from living Eskimo. The method of attaching the object in Fig. 22 differs somewhat from that employed for the bone and ivory barbs noted by Waterman, but this may be due to the fact that they are of wood. Anyway, it seems certain that the wooden objects we have noted are similar barbs for fish spears. A number of the sites near Etah returned fragments of fish spear heads in which the barb was thrust through the side strip

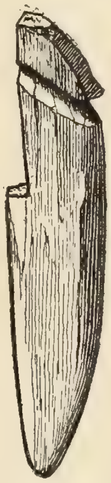

Fig. 22 (60.1–4406a). Wooden Barb for a Fish Spear. Length, 5.5 cm.

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[1] Thalbitzer, *Meddelelser om Grønland*, vol. 28, 366.

[2] Boas, part 2, 391, Fig. 185.

[3] This series, vol. 4, part 2, 301.

precisely as observed upon spears in collections from the living Eskimo. No such parts were found in the midden where the above-noted wooden barbs appeared, nor did they occur in other sites yielding this same wooden barb. All this is consistent with the view that the specimens figured are barbs for fish spears.

The second problematical object, numerous examples of which were found in Comer's Midden and occasional examples at other sites near Etah, is shown in Fig. 23b. They average about 12 cm. in length and are, without exception, made of wood. They are rather flat, though sometimes approaching a circular cross-section, and obliquely across the widest part is a groove of considerable depth. The tapering end is usually provided with a knob or, in some cases a kind of spur, while the opposite end is brought to a blunt point.

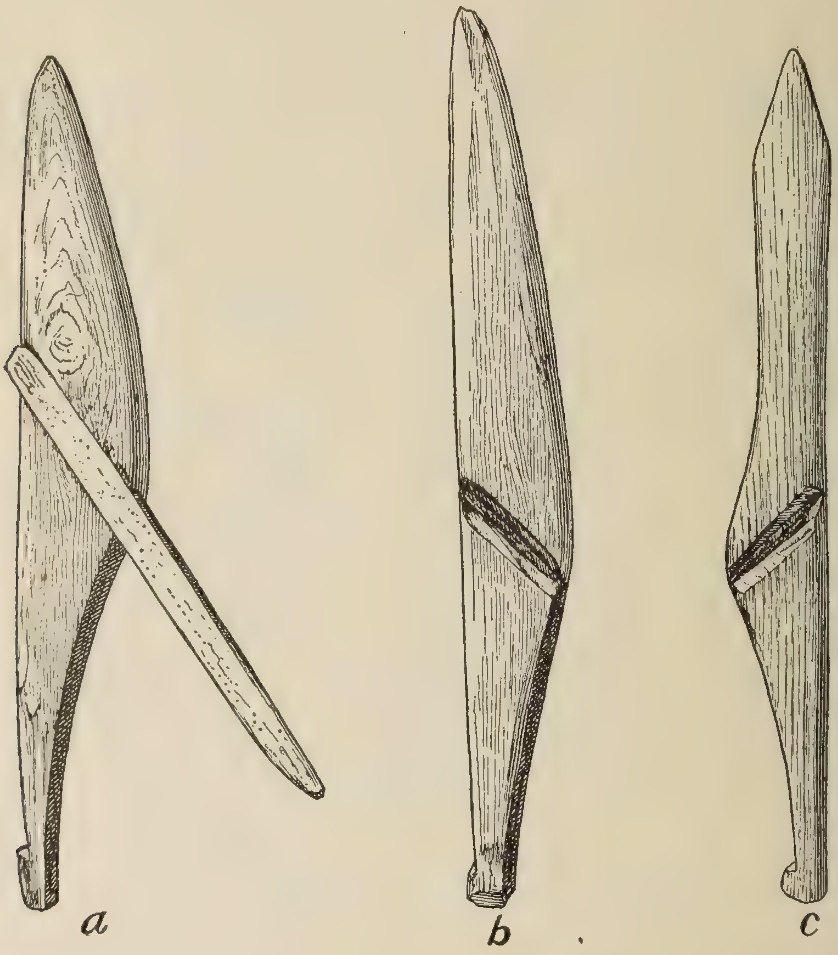

Fig. 23 (60.1–6691, 4406b, 4406c). Gull Hooks. *a*, Hudson Bay; *b* and *c*, Comer's Midden. Length of *a*, 10.5 cm.

The only objects suggesting these are figured by Thomsen[1] as prongs for fish spears. From the measurements given, they are slightly longer than the objects here described, though nothing is said of the oblique groove across their body. Otherwise, they have the form and character of the objects we are considering. Thomsen regards his specimens as peculiar since there have not come to his knowledge any prongs for fish or other spears that were made of wood. We hesitate to base any conclusion upon the peculiar resemblance between these objects from East Greenland and from Northwest Greenland, but if it should turn out that they had a similar use, we shall have one of the most suggestive parallels yet brought to notice.

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[1] Thomsen, Plate 17.

On the other hand, Captain Comer took from a house ruin south of Wager River, west of Hudson Bay, the object shown in Fig. 23a. This one had a bone barb in the groove where it fits so snugly that it cannot be pulled out easily. This adds great interest to these objects since there can be no doubt as to the identity of this form with those from North Star Bay.

As to the use of this object, we are in doubt. It has been suggested that it is a fish hook, but Captain Comer was told by natives at Etah that it was an implement for taking gulls. The wood causes the hook to float and, if properly baited, will be gulped by a gull.

Now, though we may be in some doubt as to the function of the two kinds of objects just described, the significance of their distribution is clear. For the second (Fig. 23), we have identity between West Hudson Bay and Northwest Greenland and probable identity with Northeast Greenland. For the first (Fig. 22), we have a close similarity between West Hudson Bay and Northwest Greenland. All are absent in collections from the living Eskimo. The only fish spear reported that suggests the first form of barb, is one from Alaska figured by Nelson.[1] We have then another fine example of widespread identity in the earlier levels of Eskimo culture.

HARPOONS.

There are a large number of harpoon heads in the collection. All are of two general types, those represented by Fig. 24 and the more familiar type of harpoon which differs from the preceding in that the foreshaft rests in a closed socket. It will be noted that in the illustrated specimen the end of the foreshaft rests in an open socket held in place by lashing. A comparison of this type with specimens from old sites in Southampton Island shows a remarkable similarity. There is, however, one point of difference. A number of Southampton Island specimens have lateral barbs of the original material, a feature also found in some East Greenland and West Greenland harpoon heads. No such barbs are found on any of the heads at Comer's Midden, though a few examples were picked up near Etah. As will be noted in the illustration, the harpoons of the first type fall into two groups, those having a point of bone, or in which the harpoon is made of a single piece, and those having detachable points of slate or metal. As may be inferred from previous statements, no stone or metal points were found; yet, the form of the groove for the point in most of these specimens suggests metal blades. All of the heads of the second type, none of which are figured here, had detachable points, presumably of metal. Their end barbs are of two forms, a single point, as in case of the other type (Fig. 24a) and a double or notched point such as is frequent on specimens from Hudson Bay and recent specimens from Smith Sound and elsewhere. For both types the material is almost universally bone. The few ivory heads returned are reasonably new and according to Captain Comer's notes were found near the surface. They are also almost without exception found among those of the second type.

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[1] Nelson, E. W., "The Eskimo about Bering Strait" (*Eighteenth Annual Report, Bureau of American Ethnology*, part 1, Washington, 1896), 150, Fig. 42 and Plate 67.

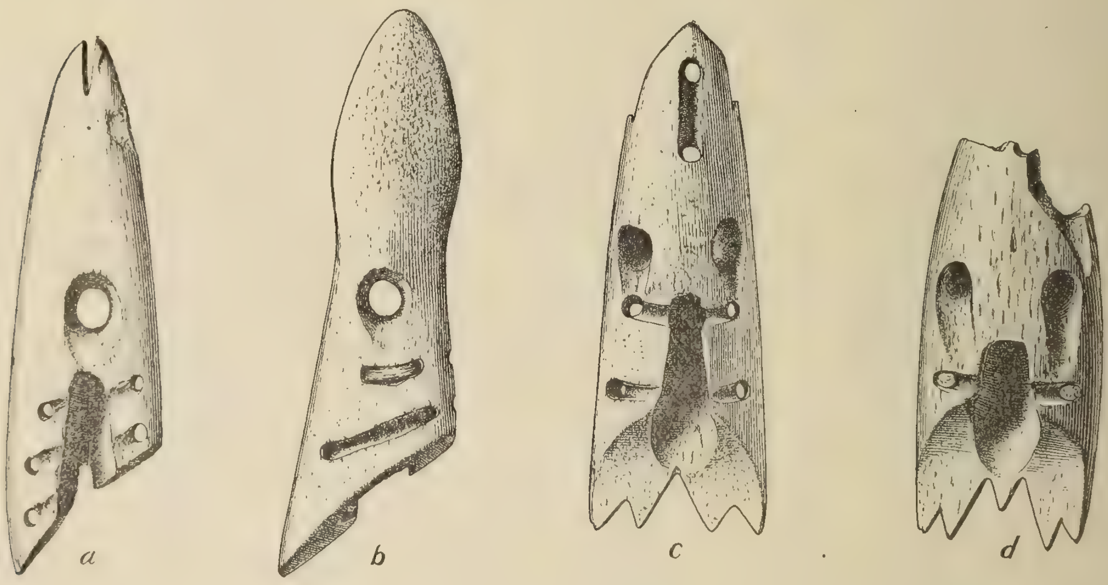

Fig. 24 (60.1–4416, 4430, 4418a–b). Harpoon Heads of Bone. Length of *a*, 8.2 cm.

It is generally assumed that the harpoon heads with open sockets, as in Fig. 24, are older than those with closed sockets. One reason for this inference is that this type prevails in the old sites at Southampton Island. This form is not conspicuous in collections from other parts of Greenland, harpoon heads here being almost exclusively those of the second, or more recent type. Whatever else this may signify, it is consistent with the assumption that the lower levels of Comer's Midden are contemporaneous with the older sites at Southampton Island. Nevertheless, both types of harpoon occur in the Midden with equal frequency, so that it may be inferred that the two types were to some extent contemporaneous; but even in that case it must be assumed that the culture at Comer's Midden is reasonably old or, at least, old enough to show definite survivals of the older antecedent culture.

All of the heads so far considered are of a size to suggest their use for seals or similar animals. There is, however, one fragment of a much larger harpoon head which must have been for whaling. Unfortunately, we have only a portion of a specimen, but from this it appears to belong to our second type, those having a closed socket and a short double-pointed end barb. It differs from whale harpoons from western North America in the shortness, or stubbiness, of the end barbs, but in this respect resembles its companion sealing heads.

A few examples of retrieving points for darts or lances may be noted. These, without exception, are barbed on one side only and in most cases have two line holes. However, their forms are too much like the generalized Eskimo type to warrant a comparative statement.

A number of foreshafts and fragments of the same were observed, but these are of the ordinary type figured in my discussion of the Stefánsson collection.[1] A few sockets for the same were observed. There were no examples of the familiar Greenland type of joint in which a kind of tenon fits into the socket on the shoulder of the shaft. Examples of this were picked up at some of the Etah sites, but in every case lacked weathering and other marks of age. From the nature of the end sockets, we infer that the shafts were of wood, though no pieces of suitable size were recovered. Also the socket piece slipped over the end of the shaft and was not fastened by a tang or oblique splice.

There were no throwing boards. Neither were there any examples of the peculiar hinged harpoon head observed in Greenland collections. Among other missing objects may be mentioned the sealing stool.

LAMPS AND KETTLES.

Though there are many fragments of steatite vessels, these are not sufficiently complete to give us an idea of the original form. There is, however, a miniature lamp which is of the precise Smith Sound pattern as described by Boas.[2] Yet, the most interesting feature is a large stone slab with ridges of cement around the edges, suggesting a lamp of the Southampton Island type. The shape of this piece also suggests the Southampton Island lamps. We may therefore, feel reasonably certain that this same type of built up lamp was known to the inhabitants of Comer's Midden. As to the type of kettle, we are not clear, though the fragments would indicate round or oval forms.

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[1] This series, vol. 14, part 2, 428, Fig. 44.

[2] Boas, part 2, 440–441.

HOUSEHOLD UTENSILS.

Under this head are several fragments of small horn spoons, portions of wooden spoons, and fragments of vessels of wood. Unfortunately, the wooden objects are too fragile to make their forms clear.

There is also an example of the coopered tub, or vessel, represented by two incomplete staves. The groove for the bottom is intact and carries one or two wooden pins with which the attachment was made. There are also a number of bottoms for similar vessels in more or less complete condition, indicating that such tubs were circular in cross-section. Objects of this kind have been described both for West and East Greenland so that no further comment is necessary.

MISCELLANEOUS OBJECTS.

Among the many other objects deserving notice are numerous rims of drums or buckets, highly perforated by small drill holes. These are particularly numerous in the collections from Etah.

There are something over fifty pieces of worked wood. Most of these are mere fragments or discarded pieces, but among them we find a number of human figures of the usual conventional form. A few similar figures of ivory were found on the surface of the Midden. So far as can be observed, there is nothing in their characteristics to differentiate them from other Eskimo carvings in Greenland.

There are a few examples of drum handles and one possible fragment belonging to a cup-and-ball game.

Among the highly problematical objects are a few curious bracket-like forms of a size sufficient to hold a harpoon or lance shaft, but as we have seen nothing like these in any other collections and the ones observed seem to be unfinished objects, no further comment is necessary.

WORK IN WHALEBONE.

This completes the description of the most important objects in Comer's Midden with the exception of examples of work in whalebone. These are strikingly numerous and deserve to be described in some detail. For one thing, we have many fragments of notched and looped strands of whalebone, suggesting nets. As to the use of a whalebone net for seals or other game in West Greenland, we have no very definite knowledge. Thalbitzer and Porsild, however, are responsible for the statement that nets of whalebone were formerly in use in Greenland. It is certain that none have been used for many years. Of course, we cannot be sure that these fragments are parts of nets, but the manner of the knots makes it strongly probable. Another interesting object is what seems to be a drying rack formed by bending strands of whalebone and tying as shown in Fig. 25. Several examples of this were dug up.

There is one large piece of whalebone the size and shape of a sled shoe and perforated in a similar manner. Whether this is a correct interpretation of its use we cannot say.

Fig. 27 is a large knife-like object 42 cm. in length. According to Murdoch, the natives of Alaska have used whalebone for knives. Since the material will take a keen edge it may be inferred that the object shown here was used as a knife.

Fig. 28 is peculiar in that it has a perforation near the larger end. It is also notched as if for wrapping. As to its use, we have no conjecture.

Fig. 29 is evidently a toggle. Figs. 26a and 26c, are of unknown use. Among the many other objects may be mentioned two top disks, a carving representing a fish, part of a knife similar to the figured specimen and a nail, or skewer-like object, reminding one of the ivory pins used for closing wounds in seals. Lastly, in Fig. 26b we have a handle of an implement, probably a knife, which seems to have been made in imitation of an animal head.

Judging by the meager accounts of work in whalebone, this collection is somewhat unique. There was a great deal more in such a fragmentary condition that it could not be recovered. According to Captain Comer's observation, the greater part came from the lowest levels of the deposit, presumably belonging to the earliest period of occupation at this particular site. All of the pieces in the collection are greatly frayed and shredded, making it very difficult to do more than determine their general outlines; nevertheless, what remains shows great technical skill as, in fact, do all the objects from this deposit.

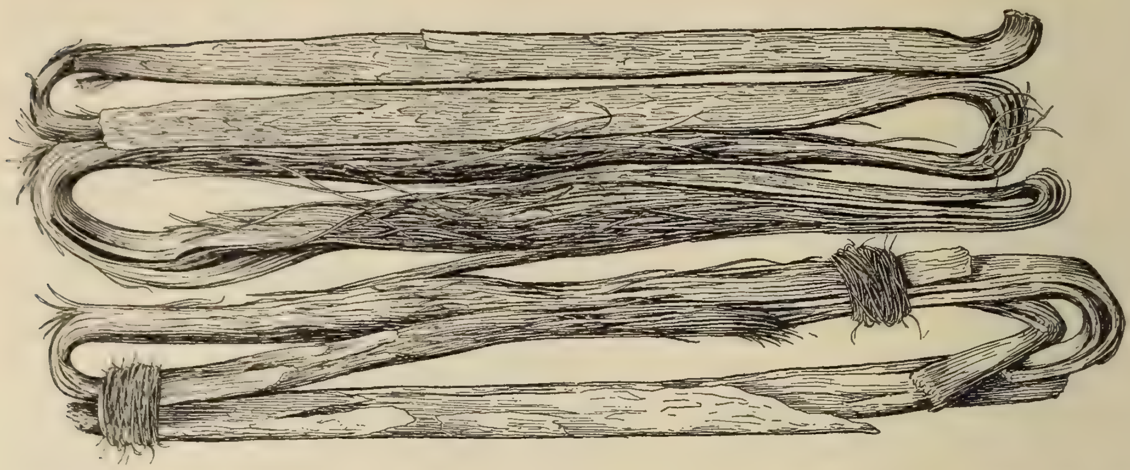

Fig. 25 (60.1–4445). Fragment of Whalebone Mat or Drying Rack. Length, 24 cm.

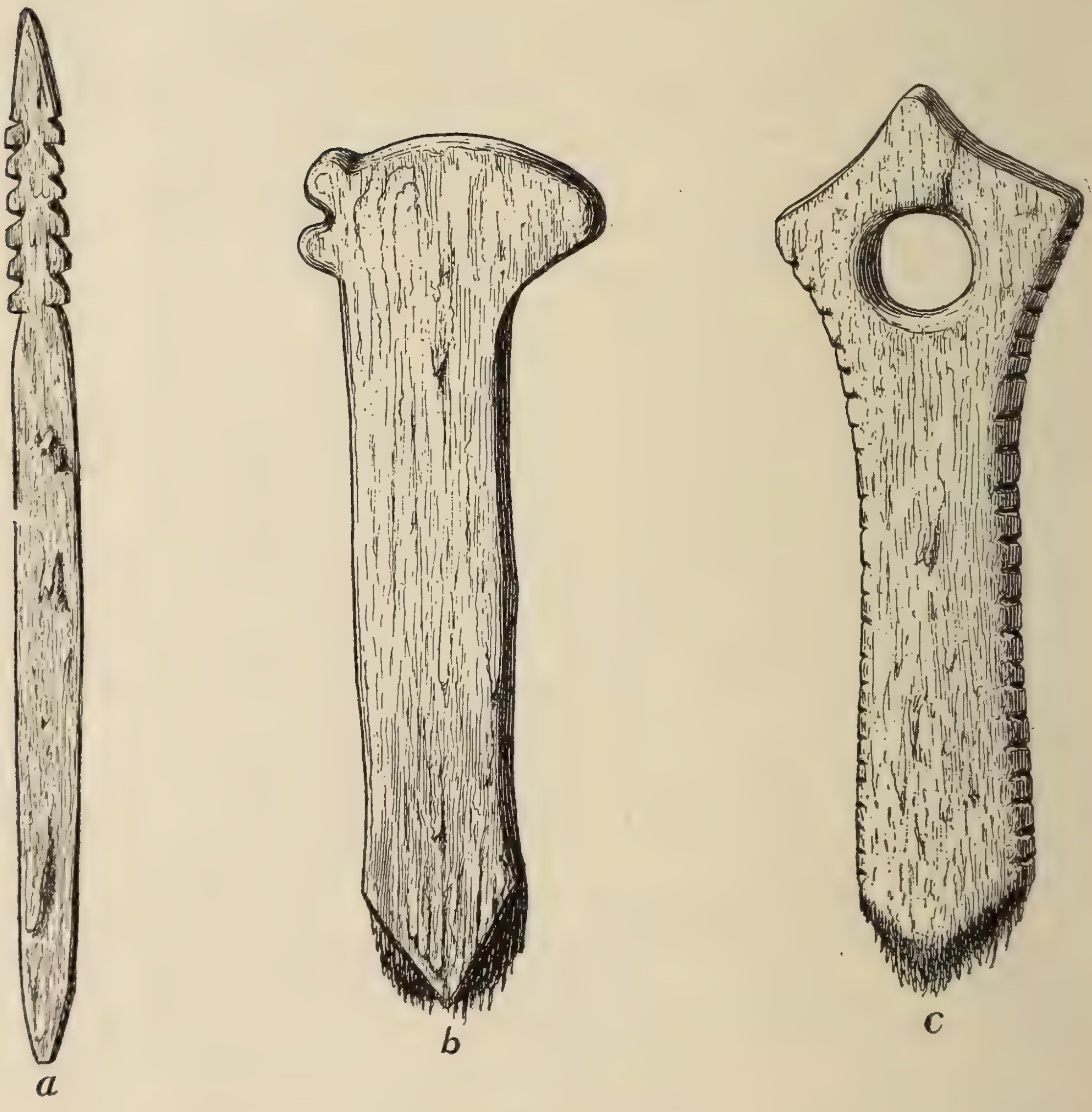

Fig. 26 (60.1–4401, 4455, 4437). Objects of Whalebone. Length of *a*, 13.5 cm.

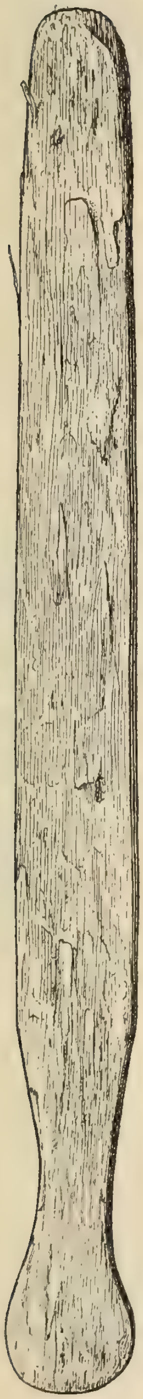

Fig. 27.

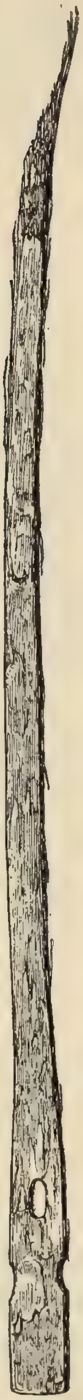

Fig. 28.

Fig. 27 (60.1–4440). A Knife of Whalebone. Length, 42 cm.
Fig. 28 (60.1–4441). Unidentified Object of Whalebone. Length, 61 cm.

A few examples of whalebone were collected near Etah, the most conspicuous being an implement handle larger than, but otherwise similar to Fig. 26b.

As noted before, a large percentage of the objects from Comer's site are made of whalebone; this prominence of whalebone artifacts in contrast with the rarity of ivory, suggests that whaling was an important feature of the old Eskimo culture at North Star Bay.

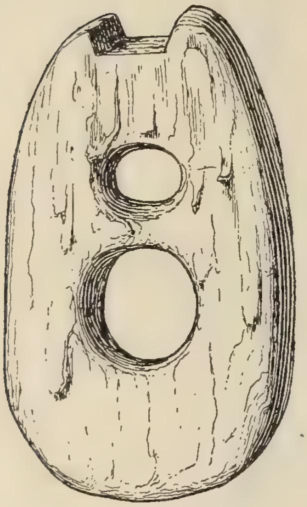

Fig. 29.

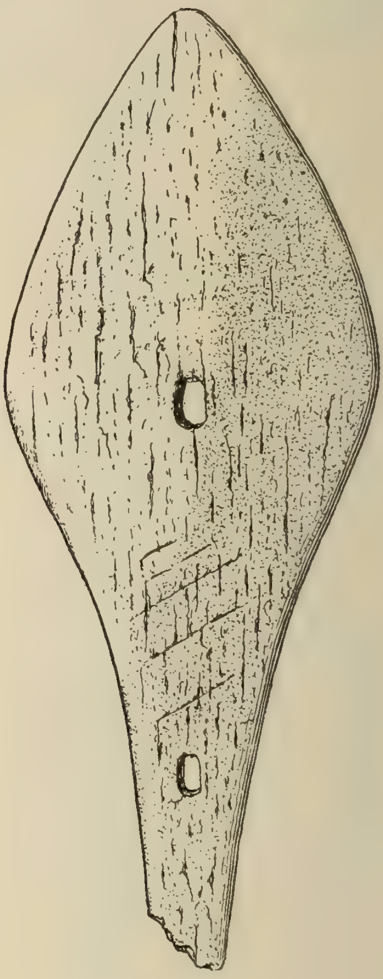

Fig. 30.

Fig. 29 (60.1–4456). Toggle of Whalebone. Length, 4 cm.
Fig. 30 (60.1–5092). A Lance Head. Length, 17.5 cm.

Stone and Bone Points Wanting.

When we consider the time and care given to the search for sites and the number examined, it is difficult to escape the conviction that in their totality they present about all that is to be expected in future exploration. Hence, the rarity of stone and bone points indicates a metal culture contemporaneous with the period of occupation. Yet, this does not agree with the evidence for a stone age around Disko Bay and southward. If the above conclusion stands, then we must assume that the Eskimo occupation of North Star Bay and the Etah district was relatively recent. We have searched all parts of the collection carefully for even the merest fragments of bone points. The only ones in evidence are a few one-piece harpoon heads with points of the original material. The only example of what may be considered a bone lance or spear head is Fig. 30 from near Etah, and this is of such unusual form that its significance is not clear.[1]

DECORATED OBJECTS.

Ornamentation by incision or perforation was conspicuously absent in the midden. In fact, it is rare in all the collections since but three such

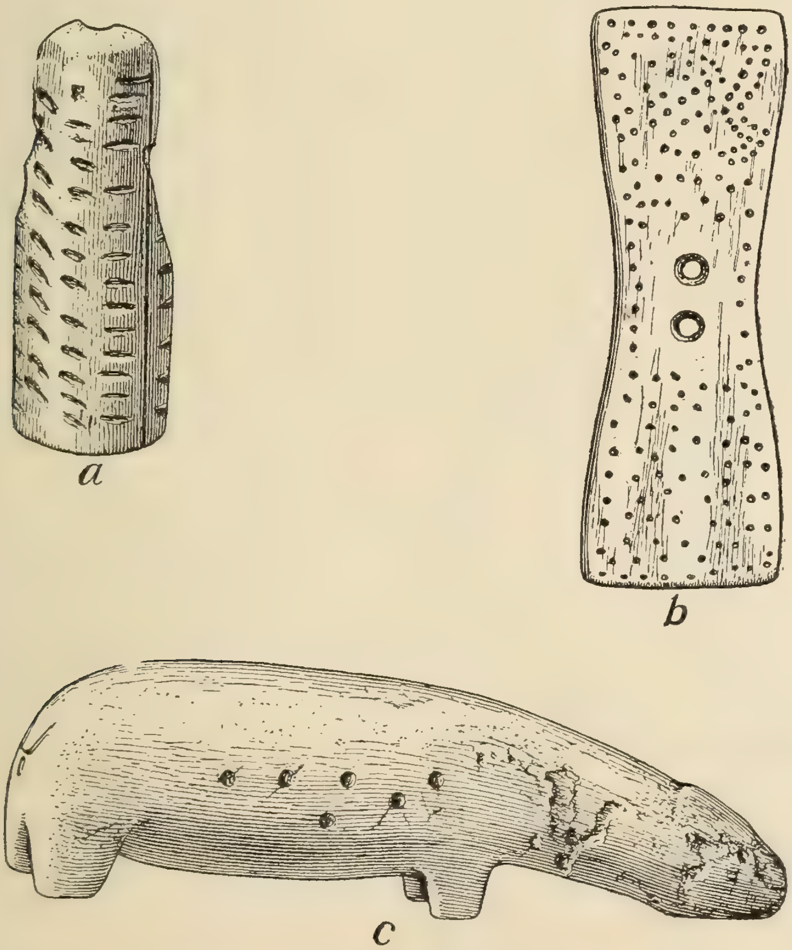

Fig. 31 (60.1–4675, 4678, 4701). Decorated Ivory Carvings, Etah. Length of *a*, 32 cm.

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[1] As to the finding of this specimen Mr. MacMillan writes as follows:— It was found at an old igloo at Etah. All the old men agreed that it was a killing iron used in the capture of seal and walrus before the advent of iron.

objects were returned and these are of doubtful age. As previously stated, there are some examples of carving; from the midden there are eight human figures in wood and one surface piece, of ivory. Of other forms, there are no traces, except some new looking ivory figures, coming from the top of the deposit and a probable fish in whalebone. This, with the embellishment of Fig. 26b, exhausts the list. The other old sites at North Star Bay yielded no examples whatever.

On the other hand, some of the Etah sites gave a fair return in carvings, some in wood, but mostly in ivory. Here animal forms prevail in contrast to the preceding. The finish and technique is equal to that observed in modern collections from the natives of the vicinity. Also, the technique of the few midden carvings is equally high.

Turning now to decorated objects, the three previously mentioned were found in house ruins near Etah (Fig. 31a–c). Figs. *b* and *c* have been embellished by drilling, or dotting. Fig. *b* presents a technique precisely comparable to objects from Baffin Land. Fig. *a* is different since it presents notches in series, in two planes. As just stated, these objects are of ivory and without indications of great age and there is nothing in their appearance that is inconsistent with the idea that they were made within ten years.

In conclusion, we may note that decorated objects are absent from all parts of Comer's Midden and apparently from all the older sites examined by the expedition. This is also true of the Alaskan sites explored by the Stefánsson-Anderson Expedition. It is fair, therefore, to raise the question as to the place of such art in Eskimo chronology.

HOUSE PLANS.

No special comment need be made on Captain Comer's sketches of house plans as shown by the ruins he excavated. The figures give the type. All were of the form designated by Danish writers as pear-shaped. The double houses are evidently what Steensby's informant had in mind when she made the sketches appearing in his excellent paper on the Polar, or Smith Sound Eskimo.[1] A comparison of the other illustrations in this book with these plans of Comer will make clear that all these ruins were of the surviving type of stone and turf house.

Steensby has rather comprehensively reviewed the general distribution of Eskimo house types,[2] placing the center for the pear-shaped house at

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[1] Steensby, H. P., "Contributions to the Ethnology and Anthropogeography of the Polar Eskimos" (*Meddelelser om Grønland*, vol. 34, Copenhagen, 1910), 323.

[2] Steensby, H. P., "An Anthropogeographical Study of the Origin of Eskimo Culture" (*Meddelelser om Grønland*, vol. 53, Copenhagen, 1916), 187–203.

Smith Sound. Its origin he considers recent, the more primitive and more widely distributed type being circular in groundplan, traces of which he thinks are to be found in Greenland. Comer did note a few such traces, but digging in them brought to light bottle glass and other traces of European trade. In his diary, he interprets these as sites for snowhouses or mere summer shelters. One or two such structures were found superimposed on ruins of the pear-shaped type. Thus, so far as Comer's observations go, the pear-shaped type is as old as any observed at North Star Bay or Etah. It appears, therefore, that so far as our field data go, this was the type of house at the time of first occupation.

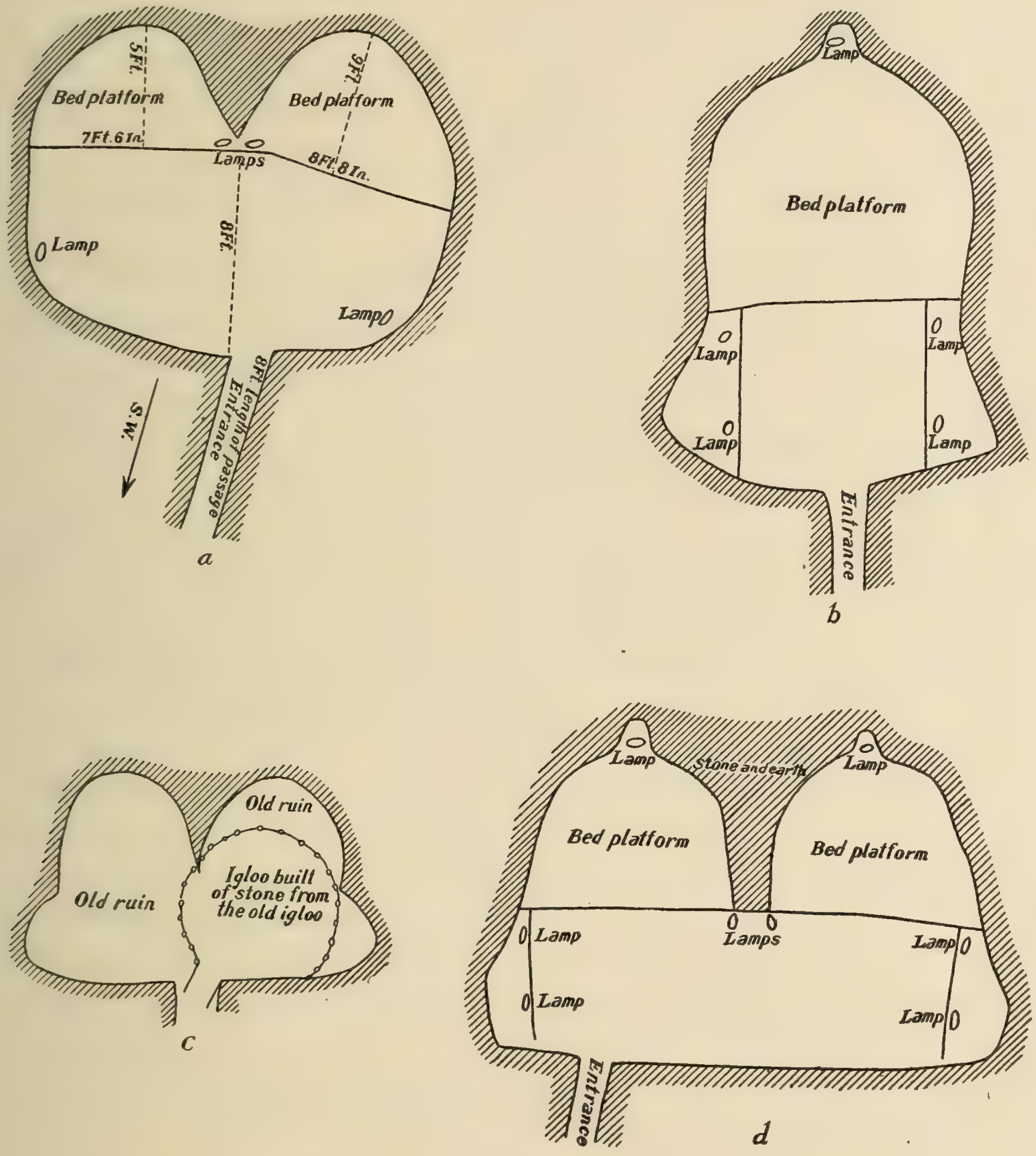

Fig. 32. Groundplans of Old Houses.

Relation of Comer's Midden to Other Sites.

Though we have continually referred to the finds from other sites, we have so emphasized those from Comer's Midden that a specific statement seems justifiable. The collections from North Star Bay, Saunders Island, and Parker Snow Bay contain many new objects, which show by their forms that they are of recent origin. Nevertheless, some house sites did yield objects suggesting the varieties of the midden. The same statements will apply to the collections from Etah. Nothing was found that belonged to a different level of culture from that of the midden, except that which clearly came from the historic Eskimo.

The historic inhabitants are the Polar Eskimo. They use the same type of house as the people of the midden and since their culture is otherwise very much the same, it is more probable than not, that we are dealing with the archaeology of the Polar Eskimo, whose descendants are still on the site and still adding to the midden.

We cannot clearly understand the position of the Polar Eskimo as a group unless we take into consideration the entire distribution of the Eskimo. The general tendency of the Eskimo has been toward a migratory form of life. In the ceaseless shiftings of his residence he has at one time and another occupied the entire Arctic coast line, as an examination of the accompanying map will show. This map shows the approximate location of Eskimo settlements reported within the past twenty-five years. The data for all the territory east of 100°, except that visited by the members of the Expedition, was taken from the maps of Thalbitzer[1] and Steensby.[2] For the Arctic coast of Canada the reports of the Stefánsson expeditions were utilized. The Alaskan sites were taken from many sources, but the National Geographic Magazine Map of 1914 was used as a check. The stippled area represents the total distribution of the Eskimo since their appearance on the coast, as indicated by the ruins of former villages and other evidences of Eskimo culture. In none of these particulars is it possible to attain a high degree of accuracy, but the relative distribution of the recent Eskimo population can be safely inferred.

The census of 1910 returned 14,087 Eskimo in Alaska, and the estimated number in Greenland is 11,790. The Canadian estimate is given as 1,300 for Labrador and 3,447 for the coast. Tabulating the population estimates and the number of settlements indicated on the map, we have the following:—

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[1] Thalbitzer, W., "A Phonetical Study of the Eskimo Language, based on Observations made on a Journey in North Greenland 1900–1901" (*Meddelelser om Grønland*, vol. 31, Copenhagen, 1904).

[2] Steensby, H. P., "An Anthropological Study of the Origin of Eskimo Culture" (*Saertryk af Meddelelser om Grønland*, vol. 53, Copenhagen, 1916).

	Number of Settlements	Population
Alaska (1910)	112	14,087
Greenland (1904)	69	11,790
Labrador (1915)	7	1,300
Canada (1915)	81	3,447
Siberia (1907)	12	1,200
	Total population	31,824

The settlements do not count as separate villages and camps, but rather as localized groups of villages. They cannot be given with great accuracy, yet their gross distribution is a safe index to the clustering of the population. As the data stand the most compact settlements are in Greenland and Labrador, while the least dense are those of the Canadian coast.

Since the large dots on this map represent the locations of villages and camps in recent years, they give us the approximate extent and density of Eskimo population during the past half century. But this does not give an adequate idea of the territory covered during the whole period of Eskimo occupation. This we have indicated by the stippled coast belt. While we do not maintain that every square mile of this territory was at some time or other lived upon by Eskimo, the reports of travelers make it probable that one cannot travel many miles in any direction within these limits without encountering traces of this culture. The preceding pages show the archaeological richness of the regions occupied by the Polar Eskimo, but this is strictly comparable to the experiences of Danish explorers in all parts of Greenland. Again, in the west, Captain Comer at Hudson Bay and Stefánsson still further west were continually meeting with traces of former inhabitants. That this should be the case is not strange, for the Eskimo must always keep to the coast for winter sealing. His expansion was, therefore, linear only.

The position of the Polar Eskimo is now clearer. While in recent years they stand alone as the most northerly outpost, either their immediate ancestors or some other group occupied successively the whole of the north coast. That their present position represents a great shrinkage of population may be doubted; it is more likely a matter of shifting habitation. But the whole of Greenland is marginal and so seems most likely to have received its Eskimo population but recently.

The most acceptable theory of Eskimo origin is that they expanded from a parent group in the Arctic Archipelago.[1] In any case, no great antiquity can be assigned to their expansion into Greenland. Danish authorities are in general agreement that the occupation of West Greenland did not begin earlier than 1200 A.D. and there is some reason to believe that it was 1400 A.D. before they had a firm footing there. How long the shores of Smith Sound and other parts of Northwest Greenland have been peopled is not known. We now know it to be the home of a small group of Eskimo, first noted by John Ross in 1818. They were then and are now the most northerly settlement, on which account the Danes call them Polar Eskimo. Peary's repeated efforts to reach the Pole from this side brought these people to notice, making them the most widely known of any. Their history and cultural position have been carefully presented by Steensby.[1] At one period of their known career, they seem to have discarded the bow and the kayak, but later took them up again. In culture, they are nearer the Central Eskimo than West or South Greenland; in fact, they are so near the former in contrast to the latter, that we must suspect their recent arrival from the Arctic Archipelago. Yet, the geographical conditions are peculiar, since the Melville Bay district is uninhabitable in winter, thus cutting easy communication between the home of the Polar Eskimo and the northern outpost of the West Greenland Eskimo. This, of itself, might account for the closer parallels with Central culture. It is also one of the reasons for taking the close resemblances to Northeast Greenland culture as indicating a movement around the north shore. It may be then, that we are not justified in assuming the late arrival of Eskimo in Northwest Greenland, but that they retained the typical culture longer because less marginal. Yet, on general grounds, the whole movement into Greenland seems recent, so recent that the appearance of iron in the culture of these Eskimo is not surprising.

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[1] Steensby, *Origin of the Eskimo Culture*, 204–218.

General Discussion.

In summarizing the preceding pages one of the first points to strike the reader is the absence from Comer's Midden of certain well-known objects; for example, needle cases, skin-working tools, bows for drills, nozzles for floats, throwing sticks, blubber pounders, bird bolas, goggles and eye shades, sealing stools, etc. It may be inferred that this indicates their absence in the culture of North Star Bay, but such a conclusion is scarcely warranted since only a small section of the accumulated camp refuse was dug out and furthermore, it is chiefly the unusable fragments of things that we find. Thus, it seems unwise to assume that when a single object is wanting in the collection made, its use was unknown to the people in question. Yet, this objection would not apply to the case of ivory as a material, for if ivory was worked at all, slivers and fragments must certainly find their way into the débris in proportion to their relative number, unless it should be that a taboo against casting them out so near the sea operated in this case. Since ivory occurs scarcely at all in the lower parts of the heap and objects usually made of ivory are here made of bone and antler, such a possibility may be disregarded. Yet, except with respect to materials, negative evidence as to the use of specific objects should be disregarded. Again, some of these missing objects do occur at some of the Etah sites as stated under the proper heads. Since there is no evidence that some of these were not contemporaneous with the lowest layers of Comer's site, we may assume their absence at the latter as accidental. In view of these conditions, the important points in this discussion will arise from comparative studies.

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[1] Steensby, *ibid.*, 268 *et seq.*

In the preceding descriptions of objects found in Comer's Midden appear certain similarities to the older sites at Hudson Bay and again in Northeast Greenland. These similarities also hold, but to a less degree, for many of the sites examined around Etah. The collections made from all sites except Comer's Midden were in the main from old long-abandoned house sites. Naturally, mixed with them is surface material of more recent date, but this can be separated out without much difficulty and we have seen a strong tendency for this older Etah material to parallel the older levels of the stratified site discovered by Captain Comer. We assume, therefore, that all the older sites explored by this expedition are roughly contemporaneous.

As to their age, we must first of all consider the fact that stone tools are conspicuously absent and that signs of metal were in evidence at every turn, though but the faintest traces of iron and copper were met with. Nevertheless, in the older part of Comer's Midden, and even at certain obviously old sites near Etah we find a kind of knife haft, identical in form with the old stone age knife of Southampton Island, yet which must have carried iron blades. Since knives of this form were observed by early visitors to Smith Sound, the metal for which was assumed to be of meteoric origin, we are confronted with the possibility of considerable age. Unfortunately, close stratigraphic studies of Comer's site were not made, but it appears that the knives using iron of this character are from the lowest levels of the deposit. Higher up were those of a more recent type: viz., a long strip of iron set in a groove. The latter belong to the historic period when traders began to supply the Eskimo of Greenland with iron and other objects. As to the age of the former, we can but speculate. Yet, there is no reason for assuming a great interval. For aught we know, all of the sites examined by the expedition are less than four hundred years old, but in that case some of them must certainly belong to the first century of that period. Naturally, if meteoric iron was in general use this period can be increased by several centuries.

Scandinavian authorities [1] on the Eskimo have carefully considered the significance of these facts. On the whole, they are rather puzzling, for we have on the one hand every indication of a respectable age and extensiveness for this iron culture and on the other, no satisfactory data as to native sources of supply. That some meteoric iron was used is considered certain, but that all of the older tools in the collections described here and similar ones in Scandinavian museums could have been supplied from meteoric sources is difficult to believe. Danish authorities have sought other sources and have put forth claims for telluric iron.[2] This, if substantiated, would put a new face upon the whole problem, for then there could be no objection to accepting the other consistent evidences of age attached to the sites in question. The use of iron would then be a natural development out of the stone age of Eskimo culture, influenced no doubt by their experience with copper west of Hudson Bay. Yet, Dr. E. O. Hovey, a geologist of the expedition, denies the presence of telluric iron in the Cape York - Smith Sound region, and makes it reasonably certain that the iron first used by the Polar Eskimo was of meteoric origin. He has been kind enough to contribute the following review of the case.

The Use of Meteoric Iron by the Polar Eskimo — Dr. E. O. Hovey.

The so-called Cape York or Smith Sound tribe of Eskimo were discovered by Captain John Ross, R. N., in 1818 when he made what was practically a pioneer voyage across Melville Bay in quest of the Northwest Passage. He reported that these people whose very existence had not been suspected before except through the vague traditions of the Eskimo of southern Greenland, were using knives and harpoon points edged with bits of iron. Ross gathered from the natives that the metal had been obtained from a locality on the shore of Melville Bay just north of and near Bushnan Island. One of them, Meigack (My-ahq?) by name told him that the iron "was found in the mountain before mentioned; that it was in several large masses, of which one in particular, which was harder than the rest, was a part of the mountain; that the others were in large pieces above ground and not of so hard nature; that they [the people] cut it off with a hard stone, and then beat it flat into pieces of the size of a sixpence, but of an oval shape." [3] The locality being some twenty-five miles back on the route which had been traversed, Ross was unable to visit it on account of the demands of his voyage, but he secured some of the knives, one of which, with a cutting edge about seven inches long, is figured in his book. He surmised that the masses of iron were meteoritic in origin, an opinion which was confirmed by the celebrated English chemist, W. H. Wollaston, to whom the fragments were submitted on the return of the expedition and who determined the presence of nickel in the iron.

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[1] Thalbitzer, 483–492; Thomsen, 430–433; Solberg, 20–21, 54.

[2] Thalbitzer, 489.

[3] John Ross, *A Voyage of Discovery*, 104. London, 1819.

Rear Admiral R. E. Peary, U. S. N., states[1] that nearly every expedition since Ross has had for one of its objectives the discovery of the actual source of this iron, but none was successful in its quest. Even Baron N. A. E. Nordenskjöld, the Swedish explorer who collected the great masses of telluric native iron on the island of Disko, Danish Greenland, failed to reach the locality, when he went to Cape York in 1883 for the express purpose of finding the northern Eskimo iron in place. Thus was it left to Peary himself to be the first white man to see the mysterious masses from which the Smith Sound Eskimo got their precious metal from time immemorial, until the frequent visits of whalers and scientific expeditions and, finally, the establishment of the Danish trading station at North Star Bay kept up a supply of manufactured iron in comparative abundance. On 27 May, 1894, R. E. Peary with Hugh J. Lee and two Eskimo guides Tah-lah-ko-te-ahq and Kes-s'oo uncovered the snow from one of the iron masses forming the group of "Cape York" meteorites, and their actuality and true character were revealed. In 1895 Peary revisited the locality with the steamer "Kite" and brought away the two smaller of the three masses then known. He saw the largest of the three masses on this trip but was unable to make any attempt at its removal. He was there again in 1896 with the steamship "Hope," but his apparatus was too weak for the task of moving and loading the great mass and he was obliged to relinquish the task. Again in 1897 the "Hope" took the indefatigable Peary to Meteorite Island and this time he was successful in bringing away the prize. Some years later the three masses, known as Ahnighito, weighing about thirty-seven tons, the Woman about five thousand pounds, and the Dog about nine hundred pounds were acquired by the American Museum of Natural History and placed on public exhibition.

For many years these three masses were supposed to comprise the whole of the Cape York series, but the Eskimo knew of a fourth large mass and in the spring of 1913, Kood-look-tohq led the famous Danish ethnologist Mr. Knud Rasmussen to it. The following year Rasmussen took Mr. W. Elmer Ekblaw, geologist of the Crocker Land Expedition, to inspect and report upon the block, which lies on the mainland back of Bushnan Island about three thousand feet above the sea and about ten miles east of north of the area where the Peary group were found. Mr. Rasmussen has presented the find to the Royal University at Copenhagen and the mass will be secured after the war is over.

Like its fellows, this eight-ton mass was surrounded by bowlders of trap which the Eskimo had brought in the almost forgotten past to use as hammers in breaking off chips and slivers of iron for use in making knives and harpoons. Both Peary and Rasmussen describe the manner in which the Eskimo illustrated to them the process employed by their ancestors in winning the desired metal. Narrow edges or ridges of the masses were laboriously hammered on with the bowlders, until small flakes, about one centimeter in diameter were worked off and secured for insertion in grooves along the edges of bone or ivory implements and weapons. There can be no doubt, judging from these accounts, that the iron formerly in use by the Cape York or Smith Sound tribe was meteoritic in origin. Furthermore it seems highly improbable that these Polar Eskimo ever knew of or used the telluric native iron of Danish Greenland in making their implements. The tribe was so effectually isolated by the then practically impassable barrier of Melville Bay that its very existence was but dimly legendary among the Eskimo of southern Greenland, while the Polar people themselves thought that they were the only men in the world, prior to the arrival of Ross a century ago.

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[1] *Northward over the Great Ice*, 554. New York, 1898.

The Crocker Land Expedition secured from an Eskimo a small iron meteorite which was found near an ancient igloo site at Eskimopolis (Sverdrup's name) at the eastern end of Knud Peninsula, Ellesmere Land, in 1914. This is now in the American Museum awaiting complete description, but certain features that it shows make desirable a brief reference to it here. It is oval in shape, 9.8 cm. by 9.7 cm. by 4.6 cm. in size and it weighs 1660 grams. It has not been cut, etched, or analyzed yet, but the coarse Widmanstaetten lines shown on an etched surface prove that it is meteoric in character. The illustrations given in Fig. 33 show the opposite, nearly flat sides of the little mass, for which the name Ahk-po-hone is proposed. The artificial edges produced by hammering are clearly indicated in the figures.

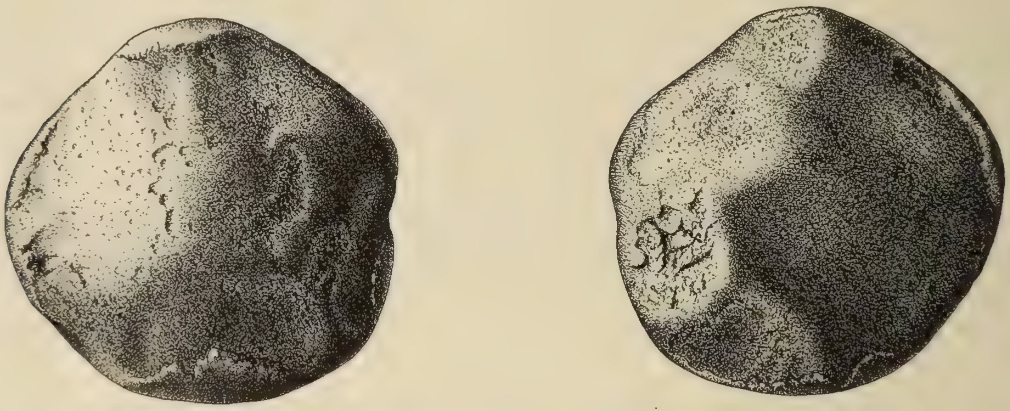
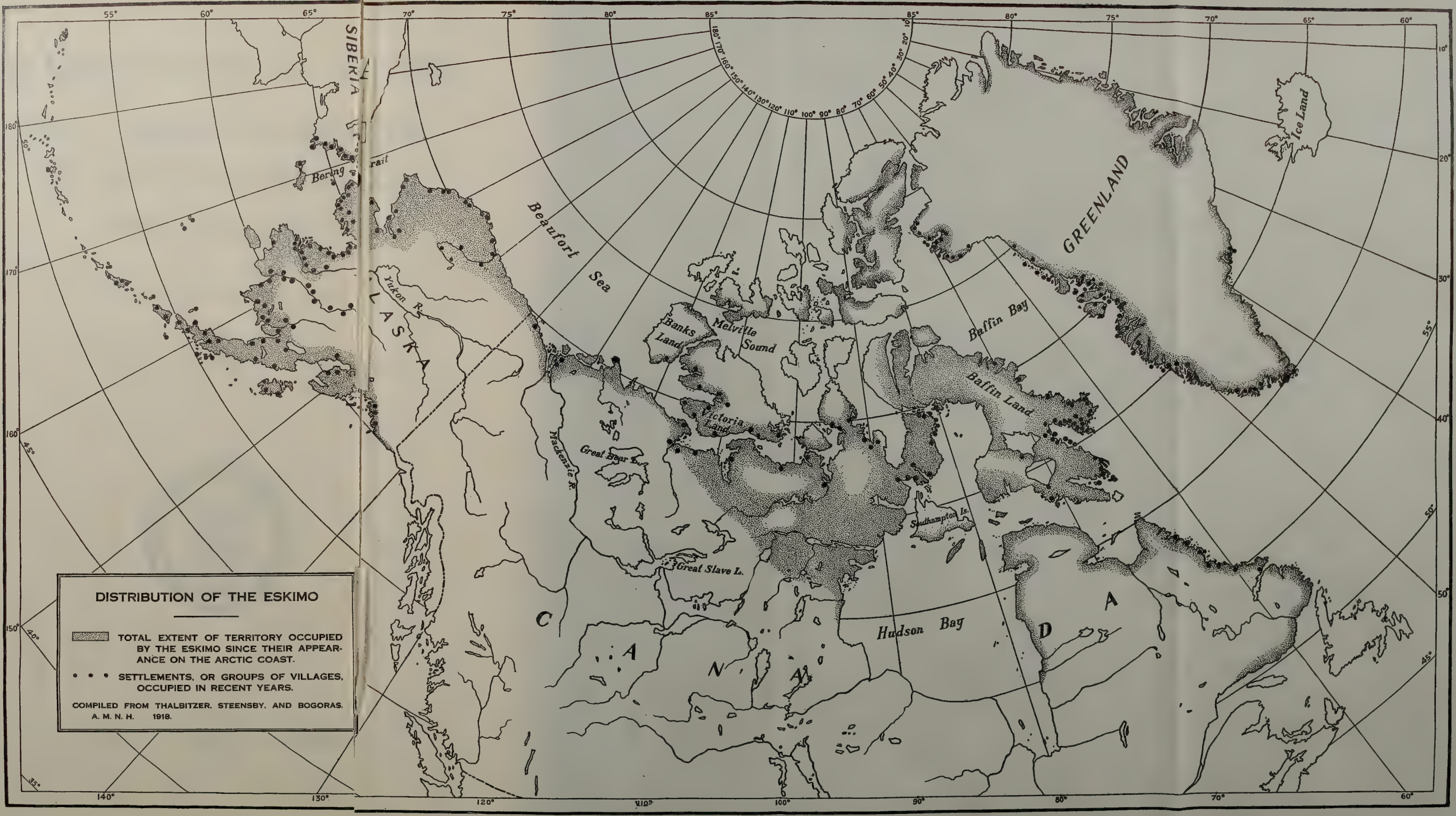


Fig. 33. Ahk-po-hone Meteorite (siderite). Eskimo Igloo Site, Knud Peninsula, Ellesmere Land. Shows effects of ancient pounding, probably for the winning of fragments for use in arming harpoon points, knives, etc. About ⅓ nat. size.

We see then that the place of iron in Eskimo culture has, if anything, been more clearly defined by the finds of Captain Comer and the investigations of the other members of the Crocker Land Expedition. The problem is one of the most important in Greenland archaeology and calls for further systematic investigation on the ground. We must look to future Danish scholars for its solution.

Aside from this, the present investigation has rather emphasized the parallels formerly observed between old Northeast Greenland sites and those of Northwest Greenland. There are also parallels with older sites at Hudson Bay and westward. Thus, it appears that the archaeological problems of Greenland have taken such definite form that their early solution may be safely predicted. This solution will go a long way in revealing the early history of the Eskimo.



DISTRIBUTION OF THE ESKIMO

▨ TOTAL EXTENT OF TERRITORY OCCUPIED BY THE ESKIMO SINCE THEIR APPEARANCE ON THE ARCTIC COAST.

• • • SETTLEMENTS, OR GROUPS OF VILLAGES, OCCUPIED IN RECENT YEARS.

COMPILED FROM THALBITZER, STEENSBY, AND BOGORAS. A. M. N. H. 1918.

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ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM
OF NATURAL HISTORY

VOL. XXII, PART IV

THE TRENTON ARGILLITE CULTURE

BY

LESLIE SPIER

NEW YORK
PUBLISHED BY ORDER OF THE TRUSTEES
1918

THE TRENTON ARGILLITE CULTURE.

By Leslie Spier.

PREFACE.

The assumed antiquity of the culture deposits at Trenton, New Jersey, has been the subject of controversy for nearly fifty years. The so-called "Argillite Culture," a deposit of stone implements and bone fragments uncovered by Abbott, Putnam, and Volk in a sand layer of intermediate geological position and undetermined age, has presumably some fair claim to antiquity. The larger aspects of the deposit have been sketched by these investigators: the following report records the relations discovered by a more detailed study.

The proposed destruction of the site for railway extension led Dr. Charles C. Abbott, owner and discoverer, to invite reëxamination by this Museum. Trial trenching was begun in May, 1914, by Mr. Alanson Skinner with my assistance, and in October, 1914, Mr. Skinner made extensive excavations. During the summer of 1915, I reëxamined and extended these excavations as the stratigraphic relations dictated. Other sites suggesting similar conditions were examined from time to time from 1913 to 1915.

Thanks are due to Dr. Abbott for his courteous invitation, to Mr. Skinner for his mass of evidence, to Mr. Louis R. Sullivan for an examination of the skeletal remains, and to Dr. Chester A. Reeds for a geological examination of the site, which to our mutual regret was not extended enough to be decisive. The coöperation of Mr. Ernest Volk, Dr. Henry B. Kümmel, Prof. J. Volney Lewis, Dr. William K. Gregory and others is appreciated, as well as the assistance of Mr. B. E. Hoover in the field.

LESLIE SPIER.

October, 1918.

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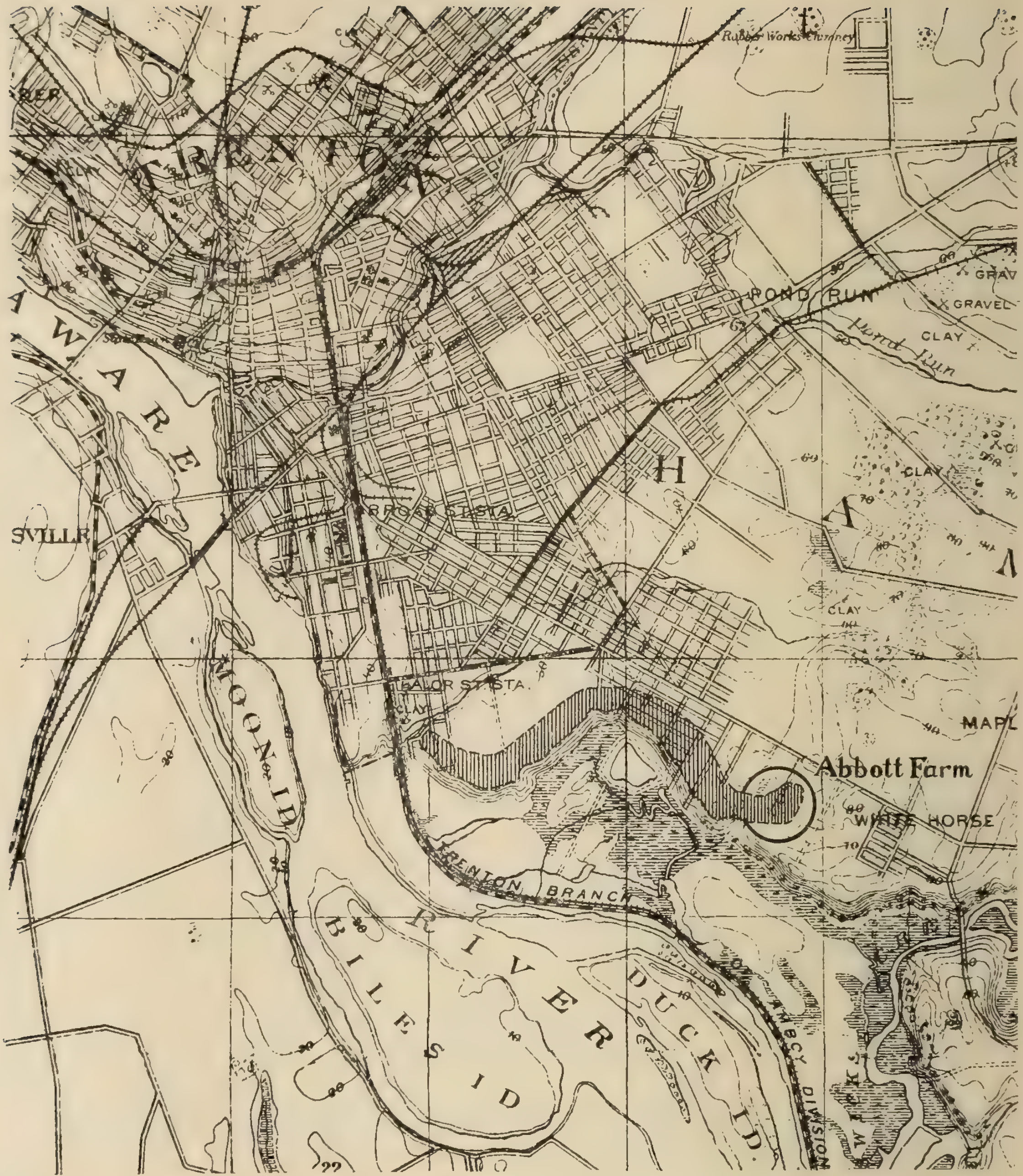

Fig. 1. Map of Trenton, showing the Location of the Area of the Argillite Culture (shaded).

INTRODUCTION.

Physiography and Geology.

In the vicinity of Trenton the Delaware River flows southeast past the city, swings in a wide semicircle east to Bordentown, and again resumes a straight course from Burlington south of west to Philadelphia (Fig. 1). In the vicinity of the bend the land on the Pennsylvania side is low and slightly rolling, with an elevation of ten to twenty feet. On the eastern or New Jersey side the city of Trenton north of Assanpink Creek is relatively high, rising to an elevation of ninety to one hundred feet. South of the creek a bluff rising forty or fifty feet above the river level swings in a wider arc a mile or so east of the river so as to leave a stretch of lowland between river and higher terrace. Crosswicks Creek, flowing from the terrace, divides the arc of the bluff almost at its midpoint. North of the creek the terrace presents two divisions. The northernmost quarter of the arc, from Assanpink Creek south to the Abbott farm, is occupied by the southern half of Trenton. The surface is very flat and slightly rolling, elevation fifty to sixty feet, and extends northeast along the valley of Assanpink Creek in the direction of Princeton to Baker's Basin. The second quarter of the arc, from Abbott's farm to Crosswicks Creek, is higher and with greater relief, being in fact a succession of gravel terraces.

Geologically considered the terrace is characterized by a succession of gravels of Quaternary age above bedrock. The oldest gravel with which we need be concerned is the Pensauken formation. This deposit was formed during a submergence of the southern and central portions of New Jersey to about present elevation 130. Subsequent to this deposition the Jerseyan ice sheet overrode the northern part of the state, descending in the Delaware Valley to a point thirty miles from Trenton. On its withdrawal the land was uplifted to an elevation somewhat above its present level with a consequent erosion of the Pensauken deposits. In the vicinity of Trenton the deposits in the valley of the present Assanpink Creek were scooped out, leaving the present higher gravel terraces south of the Abbott farm referred to above. Late in the Post-Jerseyan stage a portion of this valley may have been refilled in part by Jerseyan drift. The next invasion of the ice sheet, the Wisconsin stage, left its terminal moraine on an irregular line extending from Belvidere on the Delaware eastward to Dover, southward past Plainfield, and again east and north through Perth Amboy and Staten Island. With the withdrawal of the ice sheet the streams draining southward were heavily overloaded with rock débris and consequently aggraded their valleys. Such a deposit lies in the Delaware Valley, extending to Trenton where it merges into coeval estuarine deposits of different origin. During the later part of this stage the southern part of the state subsided to forty or fifty feet below its present level with resulting erosions and depositions. At this time (Cape May Submergence) the sixty-foot plain of gravel extending from southern Trenton northeastward along Assanpink Creek to Baker's Basin was formed. It is composed partly of glacial material from up the Delaware and partly of non-glacial material from the southeast. After the withdrawal of the Wisconsin ice sheet came a differential uplift and subsequently a slight subsidence. This change of elevation has caused the Delaware to erode its valley in the vicinity of Trenton to a depth of forty or fifty feet below the sixty-foot gravel plain, thus forming the existing physiographic relations of bluff and terrace. Post-glacial conditions have brought minor superficial changes, such as the deposition of the stratum or perhaps strata of yellow sand which caps the mixed gravels.

From the broader geological viewpoint this sand forms an integral part of the glacial and post-glacial gravels descriptively referred to as the Cape May formation. It cannot be too strongly emphasized that these recent sands and gravels are avowedly of heterogeneous origin and can only be classed together from the angle of geologic history as a whole. From an archaeological viewpoint a distinction has been drawn between them; by some authorities the gravels have been associated with one prehistoric culture, the sand with another.[1]

Broadly speaking then a trench sunk into the terrace at any point from the Abbott farm northward discloses three strata which the archaeologist has seen fit to recognize as distinct, while knowing that the geologist has not sufficient criteria to discriminate between them. The present surface soil is a black humus six inches or more deep; below this is a stratum of yellow sand from one to six feet deep resting on stratified gravels extending at least to the flood plain of the Delaware.

The black soil is the upper surface of the stratum of yellow sand discolored by decayed organic matter. The surface is under cultivation and repeated plowing has produced a uniform mixture of organic material and discolored sand. It seems clear that the sharply marked plane of contact of black and yellow soils is simply the plow-line. Minor erosive and aeolian changes have given the black soil a differential depth from a few inches to several feet, but it is fairly uniform at about six inches.

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[1] This description has been drawn largely from the convenient summary by Lewis and Kümmel and from the Geologic Atlas, Bascom.

The yellow sand ("yellow drift") varies in thickness from one to six feet and more. It is loose, relatively structureless, and varies locally in coarseness, the gravel constituent gradually becoming more noticeable two or three miles from the river northeast of south Trenton. In the vicinity of the escarpment the sand is relatively free from gravel, but encloses pebbles from the size of peas to boulders of three and four feet diameter. The pebbles and boulders vary in character and position in the sand: the distribution of some will be discussed later. The sand is traversed by red layers or films (the "red bands" as seen in section), composed of clay, iron, and sand, which appear at frequent intervals from a few inches below the surface down. They extend throughout the deposit from the south end of Trenton to the Abbott farm. As seen in section they appear as irregular, wavy bands, usually four to six inches apart, thin near the surface but increasing in thickness with the increase in depth. The sand deposit has been ascribed variously to aeolian and fluvial origins, the red bands to fluvial origins or as marking ancient surfaces.[1]

Within the last fifty years archaeologists have alleged three cultures associated with the three strata, black soil, yellow drift, and gravels. The black soil contains the relics of historic Indians, the Delaware and perhaps others. Below this the yellow sand was believed to contain a ruder culture, chipped blades and hammerstones, but no pottery or finer stonework. Chipped pebbles taken from the gravels or associated with them have been styled "palaeolithic" and assigned a great antiquity.

In this paper we are concerned with the alleged culture of the yellow sand, the so-called "argillite culture."

PREVIOUS WORK.

The work of earlier investigators extends over a period of fifty years. The literature is voluminous and in part irrelevant. The ideas presented concerning the "argillite culture" are obscured by the evidence adduced for a still earlier "paleolithic" culture. Since we are not concerned here with that evidence, it will be necessary to point out those facts brought forward which bear strictly on the "argillite culture."

The earlier stages in the development of the problem were almost entirely the work of Dr. Charles C. Abbott. As early as 1872 he found near Trenton crude implements associated with remains of the historic Delaware Indians.

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[1] Kümmel; Salisbury; Wright; etc. For further details of the sand see Volk, (b), 1–13.

When later similar crude specimens were found at various depths in the underlying gravels in the vicinity, his inference was that these were the remains of a paleolithic culture. This had flourished on the spot while the gravel terraces were forming and in some instances had become accidentally associated with the remains of the historic culture. We get our first hint, however, that there may be a third or intermediate culture in his "Primitive Industry" (1881). Our attention is called to the predominance of argillite over flints deep in the soil when compared with surface finds. It is suggested that these finds may be examples of a link between the paleolithic remains and those of the historic Indians.[1] More than ten years (1883) after his first finds, Dr. Abbott crystallized his conception of a third culture intermediate in geological position and cultural type. This comprises the group of implements, made wholly or largely of argillite, lying in the stratum of sand capping the gravels in which the paleolithic finds occur and underlying the surface soil containing Delaware relics.

> ....Below the base of this deposit of [black] soil, at an average depth of about two feet, the *argillite* implements occur in greatest abundance.[2]

This third culture is not isolated nor is it intermediate and transitional between paleolithic and Indian cultures: it is the lineal descendant of the paleolithic, but not the ancestor of the Indian culture.[3] It is conceived that the argillite culture did not develop in the area occupied by the yellow sand, but rather on the high ground bordering the small streams in the vicinity at a time when their normal water burden was at the present freshet stage, and that the implements were subsequently washed into the position in which they were found.[4] Later, however, (1908) Abbott changed his conception of the cultural leanings of these finds, their similarity to Delaware remains suggesting that they gradually merged into the historic types.[5]

Much of the irrelevance of subsequent discussion must be laid to the lack of clearness and precision in Abbott's presentation.

In his discussion of the general situation, Holmes (1893), is properly critical of the proofs for the existence of a paleolithic culture and a culture of the glacial epoch but he fails to note Abbott's discrimination among the supposed pre-Delaware finds.[6] Subsequently he dismisses the argillite culture rather cavalierly, contending that these implements represent an arbitrarily selected series from historic Indian remains and failing to note that Abbott's attention was directed to them by their association with the yellow sand.[1] In 1897 Holmes assumed a more compromising position. The three reputed cultures are not such, but by assigning some historical relief to the Delaware occupation may be explained in the following way. The first Delaware utilized for their implements the only available material, the argillite boulders at Trenton, and left behind on the spot the quarry refuse, the supposed paleoliths: later as they spread and explored the upland, flint and jasper became available. Yet Holmes seems to indicate that this explanation is inadequate, since he expresses his intention to treat subsequently of the superficial sand deposits.[2] I am unable to find any further discussion of the point.

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[1] Abbott, (d), 467, 276, 515 and 517.

[2] Abbott, (e), 318 and 321.

[3] Abbott, (f), 21 *et seq.*

[4] Abbott, (g), 147 *et seq.*

[5] Abbott, (i), II, 29.

[6] Holmes, (a), (b).

At the same time (1897) Putnam contributed a significant statement.

> If you will dig a trench anywhere in that region [Lalor Field], you will find many more implements of this character [objects of the argillite culture] in the upper bed of sand than in the black soil; you will find that they are most abundant just at the border line of the black soil and the sand.[3]

This observation, like Abbott's noted above, was not valued at its true worth.

Mercer's contribution to the subject (1897) is to the point. Concerned only with the alleged culture in the yellow sand, he concludes as the result of his own excavations that implements of argillite, jasper, and chert occur *in situ* in the sand, that there is no marked difference from surface finds in the kind of material used, their patina, or mode of fracture, but that animal bones and pottery are absent. His remarks on the position of the artifacts are interesting: —

> [Stone chips and fractured pebbles] showed thickest under the latter [the black soil], growing thinner downward. . . . The artifacts were scattered at irregular depths in the sand, nowhere suggesting by their collocation a floor of occupancy or workshop abandoned by primitive man.

While he recognized that all his finds were made in a "shallow zone of discovery, ceasing at about three feet below the surface," yet his statement concerning their frequency of occurrence is incorrect, as I shall show later on the basis of his concrete data. Nevertheless, Mercer's must be recognized as the first precise account of the argillite culture.[4]

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[1] Holmes, (c), 30 *et seq.*

[2] Holmes, (d), 365–366.

[3] Putnam, (g), 346.

[4] Mercer, (c).

Systematic explorations in the Trenton district began in 1889 when Mr. Ernest Volk started operations. In 1893 [1] he found that the following conditions held for the argillite culture: both on the terrace and on the meadow at river level he found argillite flakes, alone except for quartzite pebbles, at the junction of the black soil with the yellow sand "and sometimes two or three inches in the yellow deposit." Further evidence seemed to indicate a progressive technical development, with the use of new materials, at higher points in the black soil. Volk's report of 1911 gives the results of his twenty years labor in full and in fairly definite form. He finds a progressive complexity and technical perfection in the historic Indian remains in the black soil on the terrace and lowland.[2] The argillite culture in the yellow drift had the following characteristics: —

1. The numerous artifacts were scattered in isolation or were grouped through several square miles of the yellow drift; these groups are called "pits" and "workshops" evidently because Volk believed the artificers lived on the drift during the process of its deposition.
2. The implements are of five types, spear head, arrow head, an implement with a jagged cutting edge, a drill-like specimen, and hammerstone. Their material is argillite, quartzite, and chert. Fire-fractured pebbles also occur, but nothing else.
3. The red bands are of fluvial origin and indicate a similar origin for the greater part of the yellow drift.[3]

Volk's attention centered on the deepest specimens with disproportionate neglect for the distribution of the majority. This attitude was seemingly dictated in part by a desire to rule out all finds which might possibly be intrusive from the surface soil. Traces of man in the gravels give Volk corroboration of a third culture. This need not concern us here. Volk's contributions are invaluable, for he showed that the artifacts are numerous, occur over a wide area, and are of a type distinct from the Delaware remains, but he neglected to make the fullest use of his data.

EXCAVATIONS.

Our operations were begun at Dr. Abbott's invitation at his farm on the terrace. This is at the extreme southern end of the area over which Mr. Volk found the argillite culture. The point we selected for trenching lies in a short tongue of yellow sand, mapped as "Cape May formation" on the U. S. G. S. Trenton map, extending south into the Pensauken formation

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[1] Volk, (a).

[2] Volk, (b), 55, 71.

[3] *Ibid.*, 103–109, 125.

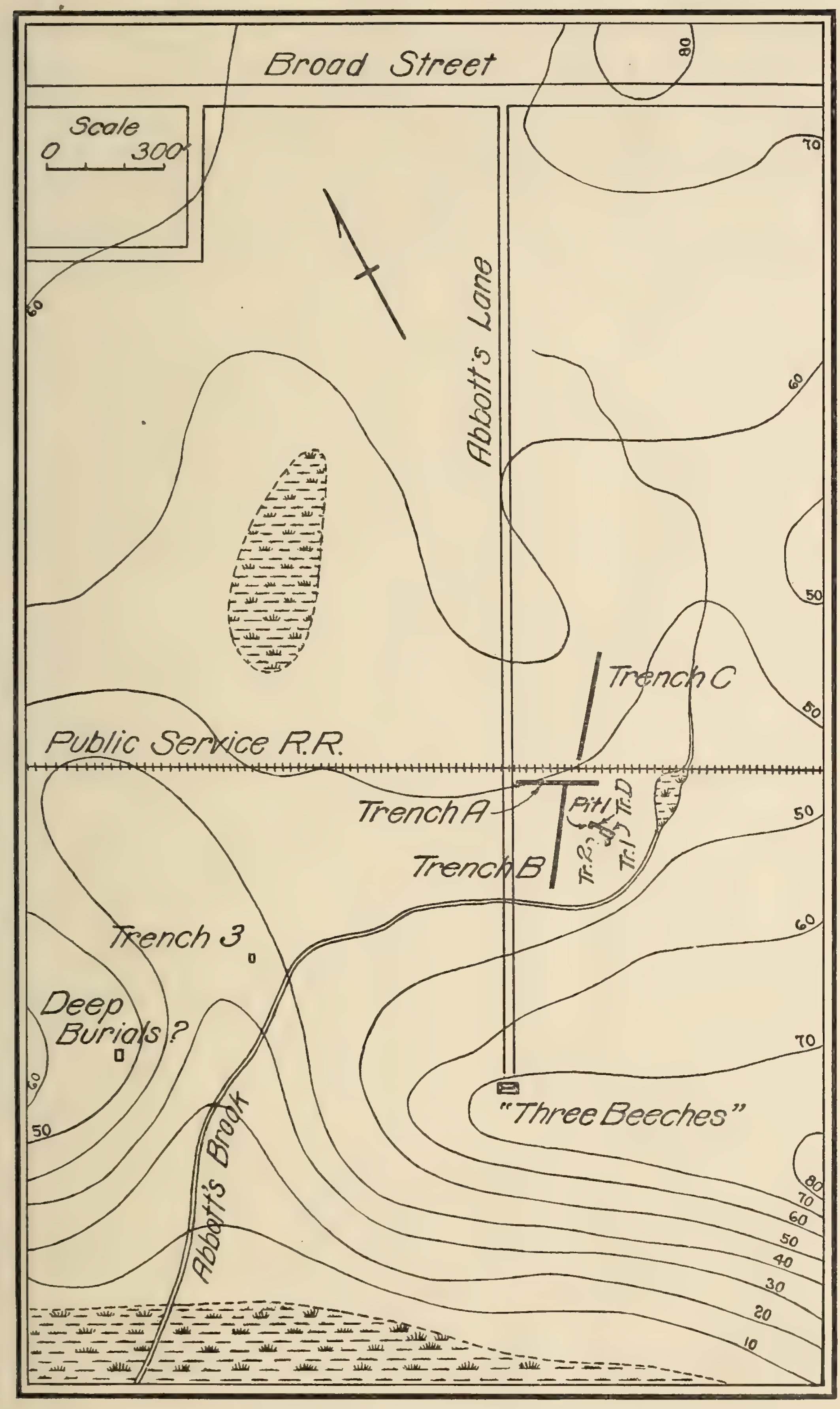

Fig. 2. Map of Abbott's Farm, showing the Position of the Trenches.

back from the bluff. Advancing eastward from the bluff on the line of Abbott's Lane, we have first a high Pensauken terrace on which the homestead stood, sloping east to a little brook 500 feet from the bluff. From the brook the yellow sand, covered, of course, by black soil, slopes gently up for 330 feet to the Trenton-Camden trolley and then slopes very gradually upward for about 1650 feet to Broad Street where the Pensauken deposit is reached again. The trenches, with one exception, lie on both sides of the trolley line between Abbott's Lane on the north and the Pensauken deposit on the south (Fig. 2).

In May, 1914, Mr. Alanson Skinner and I opened three small trenches and a pit as follows: Trench 1, 8 ft. wide by 30 ft.; Trench 2, 5 ft. wide by 8 ft.; Trench 3, 7 ft. wide by 10 ft.; all trenches 4 ft. deep, i. e., the full depth of the yellow sand; Pit 1, 7 ft. by 8 ft. by 6.5 ft. deep. The surface soil was entirely removed; then trenching proceeded by scraping the breast or forward face of the trench with a trowel. The depth below the plane of contact of black and yellow soils (now the surface) and the lateral position of each specimen was noted before it was removed.

This sample trenching corroborating Volk's findings, Mr. Skinner commenced (October, 1914) extensive excavations. Three trenches were dug, one parallel to the trolley tracks (A), the others cross-secting the hillside (B and C). Trench A was 206 ft. long by 8.5 ft., Trench B, 150 ft. long by 3 ft., and Trench C, 190 ft. by 2.5 ft. These were excavated in levels, a foot at a time, and the sand sifted. The uppermost level, 2 ft. deep in Trench A and 1 ft. in Trenches B and C, including both black soil and yellow was arbitrarily segregated as being within a "zone of doubt." Trench A was excavated throughout to a depth of 3 ft., for half its length to 5 ft., and in the middle a pit was carried down to ground-water level at 12.5 ft. Trench B, extending down hill, was excavated in a series of steps with 1 ft. lifts to maintain a constant minimum depth of 4 ft. Trench C, on the level, was excavated to a depth of 2 ft. This trenching resulted in a large number of specimens whose distribution was similar to that in Trenches 1, 2, and 3.

I now found that tabulating the recorded positions of specimens from Trenches 1 and 2 gave a characteristic distribution curve which also held for Volk's and Mercer's finds in Lalor field. The gross distribution of the specimens from Trenches A, B, and C also agreed. To test this result Trenches B and C were reopened and the slope further cross-sected by deepening them to a depth of 1 ft. below the artifact-bearing zone, and by extending the trenches for the full distance down the slopes. The neat line of these excavations is shown on the profile of Trenches B and C (Fig. 3). The sand from the trenches was sifted a shovelful at a time and depths of specimens below the plane of contact immediately recorded. The greatest error in these records due to the screening method is 2 inches. Other artifact curves were obtained by troweling sections along the line of trench. In all four hundred specimens were found. At the suggestion of Dr. Chester A. Reeds the location of pebbles was recorded. Troweled sections similar to those used to obtain artifact curves and yielding pebble curves were dug as close to the artifact sections as possible. The red bands traversing the yellow soil were carefully mapped.

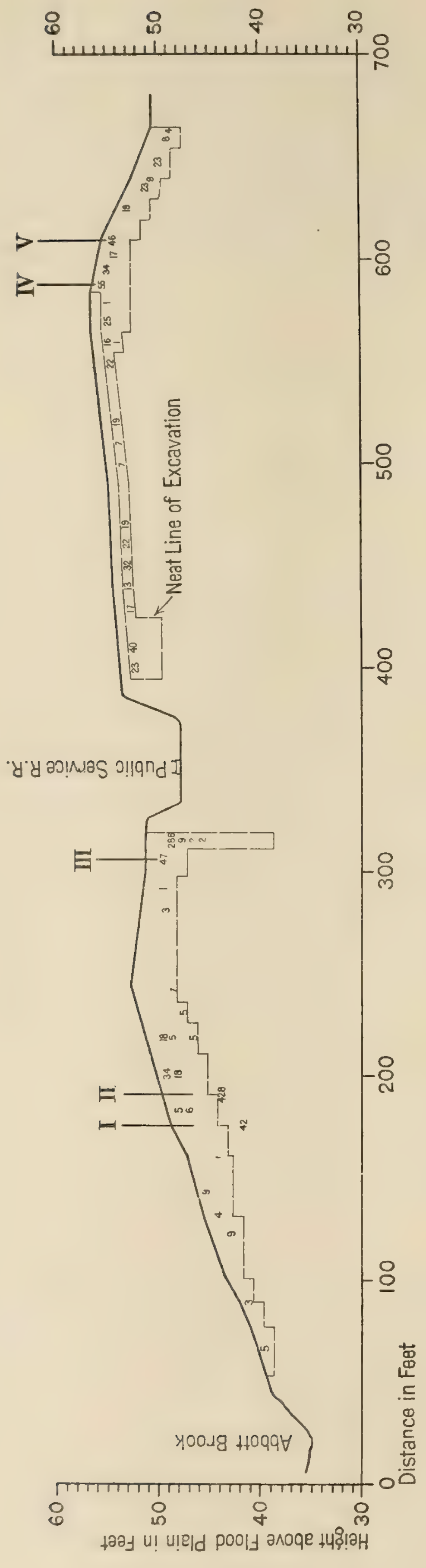

Fig. 3. Profile of Trenches B and C, looking north.

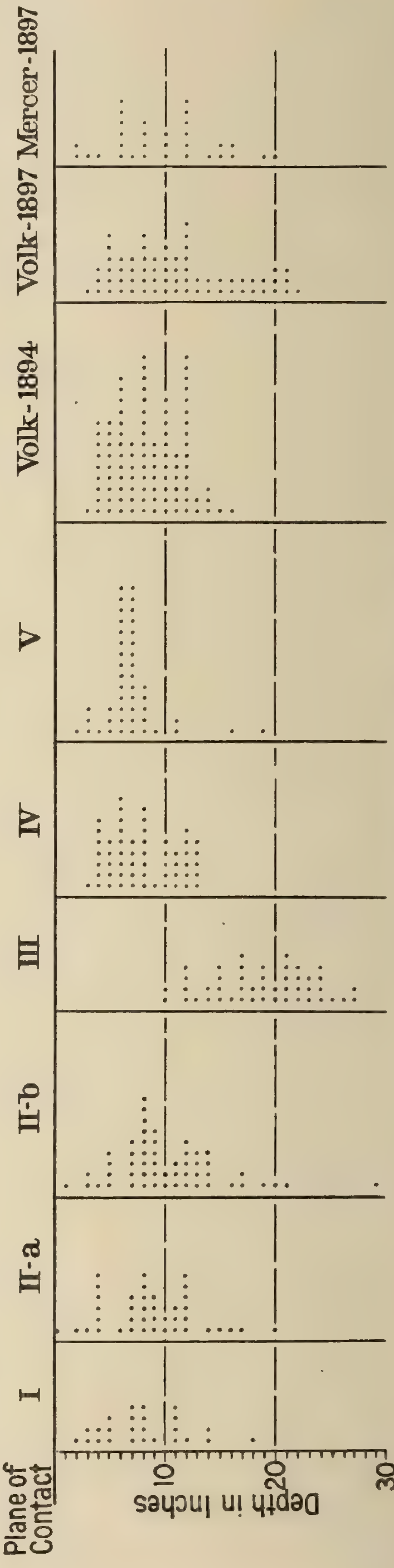

Fig. 4. Vertical Distribution of Artifact Groups.

STRATIGRAPHIC RELATIONS.

The area of yellow sand from which objects of the argillite culture have been taken is not large (Fig. 1). Volk's excavations define it as beginning, "at the so-called Riverview Cemetery at the south end of Trenton, where the bank strikes the Delaware River, along the top of the terrace directly east and then southeast following its windings and finally south altogether to the little stream which runs through Dr. Abbott's farm; a strip of land about three [?] miles in length and about three to four hundred feet or more in width," [1] to which our excavations add a few hundred feet at the south end. While the area specified is a narrow strip along the escarpment of the terrace, I am not certain that objects have not been found further back from the bluff. Mr. Volk is not clear as to whether he has not found objects inland or whether he carried on no systematic excavations there. On the Abbott farm, where the Museum party operated, artifacts were found as far as 1430 feet from the bluff.

The distribution of the specimens within the yellow soil shows a suggestive arrangement. The bulk of the specimens lie in a plane located from six inches to a foot below the black soil. I have indicated on the profile of Trenches B and C, (Fig. 3), the distribution of all the specimens by figures representing the number of specimens found near the position occupied by each figure. Beginning at the western end, it will be noted that only isolated specimens were found in the first 180 feet, east of this the mass of the specimens lie in a single plane at a grade of 1.5 percent to 2.0 percent for the first 400 feet, and roughly parallel to the surface for the remaining distance. This plane lies from 12 to 18 inches below the surface. To these data we must add that of the work of 1914 in Trenches 1, 2, and 3, which is in entire agreement. Trenches 1 and 2 lie beyond the crest of the slope and therefore not in the plane of the profile, but they are, nevertheless, indicated at II and I, respectively. As indicated in the profile, distribution in this plane is not uniform. The objects occur in groups, the lateral distribution of which is of normal frequency or accidental type.[2]

The vertical arrangement of these groups is given by the following series. I have tabulated the number of specimens for each inch of depth for groups I–V on the profile and from Trench 3. Comparable data by Volk and Mercer from Lalor field (more than a mile north) are also given. Mercer's data are recorded depths of individual specimens from several trenches; [3]

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[1] Personal communication.

[2] Spier, (c), 183–185.

[3] Mercer, (c).

Volk's chart series was checked from a chart in the Museum,[1] and his 1894 and 1897 series represent the frequency of positions mentioned in his report, not the number of specimens.[2]

Depth Below Plane of Contact. (Inches)	Frequencies										
	I	IIa Arti-facts	IIb Bone	III	IV	V	Trench 3	Mercer 1897	Volk Chart	Volk 1894	Volk 1897
0	..	1	..	..	..	..	..	..	..	..	..
1	..	..	1	..	..	..	..	..	..	..	..
2	1	1	..	..	..	1	..	2	..	..	..
3	2	1	2	..	1	3	3	1	1	1	1
4	2	6	1	..	7	1	2	1	2	9	3
5	3	..	4	..	5	3	2	..	2	9	6
6	..	1	..	..	9	14	3	6	5	13	4
7	4	4	5	..	5	14	2	1	6	7	4
8	4	6	9	..	8	5	2	4	3	15	6
9	1	4	6	..	1	1	3	..	1	7	4
10	..	2	2	2	5	..	..	3	1	11	5
11	4	3	3	..	4	2	1	..	..	6	4
12	1	6	5	4	6	..	..	6	..	15	7
13	..	..	4	1	4	..	..	..	3	2	2
14	2	1	4	2	..	..	..	1	1	3	2
15	..	1	..	4	..	..	..	2	..	1	2
16	..	1	1	1	..	1	..	2	..	1	2
17	..	1	2	5	..	..	..	..	..	..	2
18	1	..	..	2	..	..	..	..	..	..	2
19	..	..	1	4	..	1	1	1	1	..	2
20	..	1	1	2	..	..	1	1	..	..	3
21	..	..	1	5	..	..	..	..	..	..	3
22	..	..	..	4	..	..	..	..	..	..	1
23	..	..	..	3	..	..	..	..	..	..	..
24	..	2	..	4	..	..	..	..	..	..	..
25	..	..	..	1	..	..	..	..		..	..
26	..	..	..	1	..	..	..	..		..	..
27	..	..	..	2	..	..	..	..	..	..	..
28	..	..	..	..	..	..	..	..	..	..	..
29	..	..	1	..	..	..	..	..	..	..	..

Some of these series are shown graphically in Fig. 4. The following gross distributions are in accord. The series from Trench A results from

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[1] Volk, (b), 90.

[2] *Ibid.*, 85 *et seq.*

Skinner's excavation by levels, the upper twelve inches or so of yellow soil having been discarded (see above); the other two are the roughly recorded occurrences from Trenches B and C, other than the series given above.

Depth Below Surface. (Feet)	Trench A	Depth Below Plane of Contact. (Inches)	Trench B	Trench C
2–3	286	0–6	13	27
3–4	9	6–12	43	86
4–5	2	12–18	29	45
5–6	2	18–24	29	15
		24–30	6	20
		30–36	3	2
		36–42	8	
		42–48	10	
		48–54	2	

An inspection of the detailed series shows their similarity in range and manner of dispersion. The ranges are similar, varying from 11 to 29 inches. In each series the position of maximum frequency is at the middle of the range, and the distribution is symmetrical about this point with the frequency of occurrence progressively less from the center to the extremes of the range. We recognize the close resemblance, if not identity, between the form of distribution common to these eleven series and the typical frequency curve.

The following averages and variabilities have been calculated for the above series.[1]

Series	Number of Cases	Average	Variability
I.	25	8.1	±3.80
IIa.	42	9.9	±4.35
IIb.	53	10.2	±4.67
III.	47	18.8	±4.84
IV.	55	8.0	±3.21
V.	46	7.0	±2.88
Trench 3	20	7.6	±4.66
Mercer–1897	31	9.8	±4.87
Volk–Chart	26	8.0	±3.68
1894	109	7.8	±2.87
1897	65	11.2	±5.22

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[1] I follow Wissler, (a), in the statistical treatment.

With the exception of III the averages are similar. There are no artifacts in the first 9 inches of this series; if this is deducted, the average is 9.8. The maximum difference between any two series is 4.2 (V and Volk — 1897) and the certainty of this is ±0.77. This approaches a real difference, but it is the extreme case. As a further but not altogether accurate test we find, assuming the series to be homologous, the average for all series combined to be 8.9 ± 3.57 (correcting III) and the error of this average is 0.16 ± 0.11. The extreme averages differ from this by 1.9 and 2.3. These are, therefore, within the range of variation of the general average. The series are probably more strictly homogeneous, since the values are not rigorous but include as variables: —

1. Measurement from the planes of contact of the black and yellow soils; this being a warped plane, it introduces a small error in the observations;
2. A possible change in the plane of maximum frequency, as indicated in III, probably due to a subsequent change in the superficial deposits;
3. Observations grouped from several trenches in one series, as Mercer, 1897, and Volk, 1894 and 1897;
4. Values dependent on the frequency of positions mentioned, not on actual count of all recorded positions.

If deduction be made for these variables we have still less reason to believe the series independent. These series are, therefore, homogeneous; that is, they are samples of a single series. The vertical distribution of the groups is such as to conclude that a single cause of deposition has acted on all, giving a single plane of maximum deposition throughout the deposit.

It is of interest to note that previous investigators obtained evidence in agreement with the above, the significance of which they failed to note; viz., Abbott found implements in greatest abundance at a depth of about two feet,[1] or again, in greatest abundance at the "base" of the deposit of black soil;[2] Kümmel noted that they occur within less than four feet of the surface;[3] Putnam generalizes that they are most abundant "just at the border line of the black soil and the [yellow] sand";[4] Wright notes their occurrence from fifteen to thirty-five inches below the surface;[5] and Mercer found a "shallow zone of discovery, ceasing at about three feet below the surface."[6]

It must now be obvious that the objection often expressed that these objects are intrusive from the black soil will no longer hold; this aside from their cultural distinctness. If they had been let down from the black soil into the yellow, we would find the maximum frequency at the plane of contact with frequencies diminishing with depth. This is not so; there is a distinct gap between the distribution of artifacts in the surface soil and those below.

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[1] Abbott, (a), 318.
[2] Abbott, (f), 313.
[3] Kümmel, 348.
[4] Putnam, (g), 346.
[5] Wright, 357.
[6] Mercer, (c), 377.

A few of Volk's finds have been interpreted at variance with these results. His "workshops"[1] in the yellow soil seem to be nothing but normal artifact groups. Four "fireplaces" and "pits" showed disturbed soil, broken red bands, "burnt" soil, or "charcoal."[2] I would suggest that the identification of these was an error. In connection with groups of artifacts, discolored strata of sand and colored clay fragments may easily be mistaken for traces of fire. The deep "burials" of human bones on the Abbott farm (three groups, 4 feet to 4 feet 6 inches below the black soil) are below the plane of maximum frequency for artifacts. They were found, however, at the extreme edge of the deposit, close to Abbott's brook which has cut a deep gully along the boundary between the sand deposit and the Pensauken terrace. There is just a possibility that the yellow sand has been worked over and redeposited by the brook, at which time the remains were either moved within the deposit or introduced from elsewhere.

Let us now consider the relation of artifacts to other features of the yellow sand, namely the pebbles and the red bands.

Artifacts occur among the pebbles in the sand and are found in general only with the pebbles. This does not mean that artifacts are found at every point where pebbles lie, nor that pebbles are always associated with artifact groups, but the association occurs with great frequency. The gross relations are given in the table on p. 188 which shows the vertical ranges of pebbles and artifacts at various points in the trenches. Thus, at least ten of the sixteen cases where pebbles and artifacts were noted at the same points show that they have identical vertical ranges, or the range of the artifacts is included in that of the pebbles.

To determine the distribution of the pebbles more exactly and their relation to that of the artifacts, series were obtained at III and V on the profile (Fig. 3). These series were taken from sections of sand in the trench wall as near as possible (within a foot or so) to the corresponding artifact series.[3]

Tabulating the number of pebbles in each inch of depth below the plane of contact, and comparing corresponding data for the artifacts, I obtained the series on p. 189. These series are shown graphically in Fig. 5. The proportion of artifacts to pebbles has no significance, since the series were taken from adjacent sections, and these sections differed in size.

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[1] Volk, (b), 87 — Oct. 17, 88 — May 20 and 23, 89 — July 30.

[2] *Ibid.*, 85 — April 26, 87 — Oct. 24, 89 — Aug. 6, 98 — July 25.

[3] These sections were 4 feet long by 6 inches wide for III and 1 foot wide for V, with depth to grade.

Gross and Serial Distribution of Pebbles and Artifacts.

Position on Horizontal Scale of Profile (Fig. 3)	Depth of Pebbles Below Plane of Contact (inches)	Depth of Artifacts Below Plane of Contact (inches)
53–101	No pebbles	6
101–146	Pebbles sparsely scattered through yellow sand, with groups as below.	
102	0–6 — group	6
115	0–12 — "	6–16
130	6–21 — "	6–20
145	17–41 (extreme limits) — group	5–39
155	20–32	24
168	20–32	21
196	34–42	6–45
211	32–44	12–41
235	46–grade — many pebbles	14–38
264	39–44; 47–grade — very many tiny pebbles in brown sand	
271	36–48 — very many	
271–311	5–38 — many	10–27
315	18–36 — many	12–66
398	26–48	6–18 (?)
409	33–46	6–18 "
416	34–48	6–18 "
584–594	0–24 — scattered tiny pebbles	3–13
596	0–20	0–23

Depth Below Plane of Contact (inches)	Frequency			
	III		V	
	Artifacts	Pebbles	Artifacts	Pebbles
0	..	2	..	..
1	..	4	..	4
2	..	4	1	6
3	..	4	3	3
4	..	1	1	10
5	..	2	3	16
6	..	5	14	20
7	..	5	14	20
8	..	3	5	22
9	..	5	1	18
10	2	9	..	14
11	..	5	2	10
12	4	9	..	8
13	1	8	..	10
14	2	9	..	12
15	4	17	..	2
16	1	21	1	6
17	5	32	..	4
18	2	32	..	2
19	4	32	..	..
20	2	41	..	2
21	5	30	..	2
22	4	40	..	1
23	3	33	..	..
24	4	33	..	1
25	1	24	..	..
26	1	24	..	..
27	2	23	..	1
28	..	20	..	..
29	..	31*	..	..
30	..	40	..	..
31	..	34	..	..
32	..	30	..	..
33	..	21	..	..
34	..	14	..	..
35	..	13	..	..
36	..	9	..	..
37	..	7	..	..
38	..	1	..	..
39	..	1	..	..
40	..	1	..	..
41	..	1	..	..

* Change of observers.

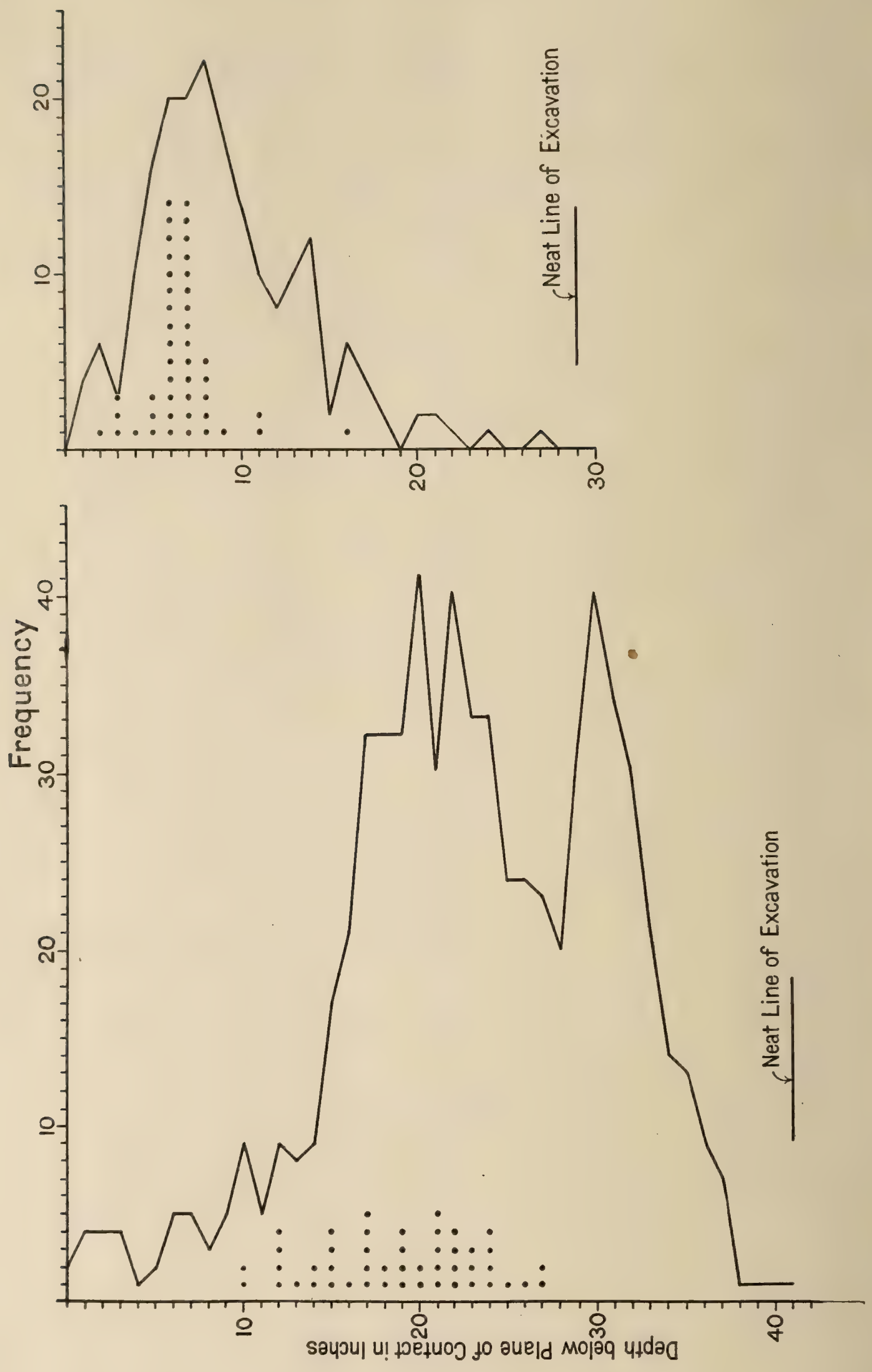

Fig. 5. Vertical Distribution of Artifacts and Pebbles of Groups III and V: Artifacts. . . .; Pebbles —.

An inspection of the two pebble series shows their similarity and their close resemblance to the typical frequency curve. On comparing each with the corresponding artifact series, we note that the modal points occur at about the same depth, that the manner of distribution is identical, and that the range of dispersion of the artifact series, if not identical with that of the pebbles, falls within it.

In calculating averages and variabilities for these series, it must be noted that III was obtained by two observers; by Mr. Hoover from 0 to 29 inches, by myself from 29 to 41 inches (at grade), the change occurring during the excavation of the twenty-ninth inch. I have apparently doubled the count. Both segments of the curve are apparently fragments of normally variable series with approximately the same ranges and modes, but differing in the total number of cases. An average for the two segments combined would obviously give too high a value, since my higher count is added to one end of the range alone. It seems permissible to use Hoover's segment alone.

Comparative data are obtained from Mercer's record for Lalor field.[1]

Series	Pebbles			Artifacts		
	Number	Average	Variability	Number	Average	Variability
III— Hoover and Spier	675	23.3	±7.55	47	18.8	±4.84
Hoover[2]	477	21.2	±3.8			
V	194	9.1	±4.37	46	7.0	±2.88
Mercer	56	11.7	±5.96	31	9.8	±4.87

In III the combined Hoover-Spier series differs from the corresponding artifact series by 4.5 ± 0.77. This is a certain difference. The difference with the Hoover series is roughly 2.4 ± 0.7. This, on the other hand, is not a certain difference. The difference for V is 2.1 ± 0.53, which approaches a real difference but is not certain. For Mercer's series, the difference is 1.9 ± 1.20, indicating the certain identity of the series. The series of bone fragments (II b) presents a comparable phenomenon; its average is 10.2 ± 4.67 and that of the artifact series (II a) is 9.9 ± 4.35, which with a difference of 0.3 ± 0.94 are certainly identical. These are fragments of two human skeletons all found within a radius of three feet; it necessarily follows that the entire series was deposited at one time.

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[1] Mercer, (c), 374–375. Mercer's pebble series is for the largest pebbles only, and particularly for those in the vicinity of 20 inches, i. e., near the only artifact in which he was interested. This grouping of observations about 20 inches gives a higher value for the average of the series than we need expect.

[2] This approximate average and variability were obtained by inspection. Accurate values could be obtained by Pearson's method of curve fitting (*Biometrika*, II, 1, 1902) but the data do not warrant the labor involved.

These data must be interpreted as indicating that the artifact series are identical with the pebble series, that is, both are components of the same series. This can only mean that a single cause of deposition has acted on artifacts and pebbles alike.

As Dr. Wissler observes: —

> While all the preceding leaves little ground for differentiating between the pebble and artifact series, it may be noted that in each of the three cases the average for pebbles is actually higher than that for artifacts. Should this hold for a few future cases, it would make it quite probable that there was a slight real difference between the two series. Yet this would not materially affect the main point, that the artifacts and pebbles occur together.[1]

It is, perhaps, significant that the difference in all three cases is approximately the same: 2.4, 2.1, and 1.9. Consonant with this is the approximation of all the variabilities, which would indicate that artifact and pebble series stand somewhat apart. On the other hand, the difference may have no significance whatever. Artifact and pebble series, as tabulated above, have approximately the same modal points; the artifact series is symmetrical but the pebble series is asymmetrical. If of two series which are identical and symmetrical, the number of cases in one be greater than the other, then according to the law of probability the range of the first series would be greater than the second. If further in this series cases at the lower end of the range were systematically eliminated (i. e., if one end of the curve is cut off), then this curve would be asymmetrical and its average would have a higher value than that of the curve with fewer cases. *In the nature of the case,* this is exactly what has happened to our pebble series, merely because it contains a larger number of cases (except Mercer's series [2]) than the artifact series, the additional cases appearing at the greatest depths more frequently than at the least. In fact when we do obtain an artifact series with a large number of cases we find asymmetry of the same type: for example, Trench A gave for the first foot, x specimens; second, 286; third, 9; fourth, 2; and fifth, 2. Any deduction from the observed differences because of this relation would give less reason for believing the series to be different.

All of these series have been discussed throughout as though they were true samples of a normally variable series. To be sure inspection of the series, in spite of the small number of observations available, shows their fairly close approximation to this form. However, we can advance no *a priori* reason why artifacts and pebbles should be distributed through the deposit in such a manner. We might reasonably expect that their distribution is actually asymmetrical and perhaps composite. It is of interest to test a series of all artifact observations combined for asymmetry. In the following table the averages for the component series have been equated and the values tabulated as variations from the average.

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[1] Wissler, (a), 194.

[2] Compare footnote, p. 191. Here we have reason to believe that but for selection the actual difference would be less than that observed.

Deviation from Average (inches)	Observed Frequency	Cases per 1000	Theoretical Frequency	Differences	
10	1	1.9	7.1		− 5.2
9	1	1.9	11.5		− 9.6
8	6	11.7	18.4		− 6.7
7	7	13.6	28.3		− 4.7
6	19	36.8	39.5		− 2.7
5	18	35.0	53.6		−18.6
4	38	73.9	67.9	6.0	
3	47	91.2	79.9	11.3	
2	57	110.8	90.2	20.6	
1	58	112.6	96.0	16.6	
0	58	112.6	96.0	16.6	
1	35	68.0	90.2		−22.2
2	40	77.6	79.9		− 2.3
3	27	52.4	67.9		−15.5
4	35	68.0	53.6	14.4	
5	18	35.0	39.5		− 4.5
6	16	31.1	28.3	2.8	
7	7	13.6	18.4		− 4.8
8	4	7.8	11.5		− 3.7
9	8	15.5	7.1	8.4	
10	7	13.6	3.8	9.8	
11	3	5.8	2.0	3.8	
12	2	3.9	1.0	2.9	
13	..	....	0.5		− 0.5
14	2	3.9	0.2	3.7	
15	..	....	0.1		− 0.1
16	..	....	0.03		− 0.03
17	..	....	0.01		− 0.01
18	..	....	0.01		− 0.01
19	1	1.9	0.001	1.9	
Totals	515	1000.1	2(500.051)	118.8	−101.15

There is no certain evidence of asymmetry here, although this might be interpreted as indicating a moderate asymmetry similar to that of the pebble series and probably due to the same causes. While the test is not perfect, I do not believe that this is sufficient reason for regarding the series as other than normally variable. To a certain extent this emphasizes the slight difference between the artifact and pebble series. The data for the pebbles will not permit a similar inquiry into the character of its distribution.

So much for the distribution of the series as a whole: the data must next be examined for differential modes of occurrence.

Most of the artifacts, chips, arrow-heads and blades, are flat. Wherever possible their obliquity to the horizontal was noted. With only two exceptions the artifacts lay with their long diameters horizontal or nearly so. This conforms with Kümmel's experience in Lalor field.[1]

The yellow sand is relatively free from pebbles: these, including artifacts, are not large. They vary in size up to small boulders, the largest of which (10 × 5 × 5 inches) was found lying flat 18 to 24 inches below the black soil at the extreme eastern end of Trench C. At the eastern end of Trench B the pebbles were chiefly $\frac{1}{4}$ to $\frac{3}{8}$ inch diameter; at the eastern end of Trench C $\frac{1}{4}$ to 2 inches diameter, most frequently $\frac{1}{2}$ inch diameter. No artifact (i. e., selected pebble) is larger than the largest boulder, and the rarity of large artifacts and large boulders is strictly comparable.

I have investigated artifact and pebble series for a differential distribution of weights of objects with positive results. The table on the next page gives the total weight of artifacts at each inch of depth for the series I–V and Trench 3.[2]

These give the following average depths of occurrence by weight which I have compared with the corresponding values for average depths by frequency.

	I	IIa	III	IV	V	Trench 3
Weight	5.8±6.08	9.1±5.00	17.3±4.16	7.4±2.97	6.3±2.39	7.4±4.97
Frequency	8.1±3.80	9.9±4.35	18.8±4.84	8.0±3.21	7.0±2.88	7.6±4.66
Differences	−2.3	−0.8	−1.5	−0.6	−0.7	−0.2

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[1] Kümmel, 348.

[2] Fourteen specimens could not be located for weighing. I have interpolated the average weight of 221 specimens, 13.9 gms., for them in the series I, IIa, IV, and Trench 3. Since the distribution of the interpolated values is random, this ought not to affect the result.

DISTRIBUTION OF ARTIFACT WEIGHTS.

Depth Below Plane of Contact (inches)	Total Weight (grams)					
	I	IIa	III	IV	V	Trench 3
0		97.1				
1						
2	56.0	1.7			10.6	
3	171.9	5.6		8.1	7.2	22.5
4	2.8	208.6		18.5	18.1	17.8
5	13.7			19.1	115.1	15.1
6		2.3		34.3	87.3	8.7
7	17.7	140.5		4.3	68.6	4.2
8	38.8	68.9		7.8	27.3	1.6
9	2.8	58.3		0.4	11.1	13.9
10		31.4	7.1	24.8		
11	39.3	19.8		8.2	8.4	3.9
12	2.2	45.5	9.6	11.4		
13			2.6	6.3		
14	32.0	186.5	209.3			
15		13.9	7.7			
16		45.4	10.7		7.1	
17		31.8	51.1			
18	8.1		6.2			
19			10.0		2.8	1.2
20		13.9	9.8			13.9
21			30.8			
22			26.8			
23			27.9			
24		85.4	31.2			
25			10.5			
26			1.8			
27			8.9			
28						
29						
30						

In every case the average depth by weight is slightly less than that by frequency. This means that in these series the center of gravity is above the center of mass. I have not investigated whether the preponderance of weight on one side is due to the larger size or greater density of the artifacts; the former seems more likely.

Unfortunately, the pebble series tabulated above were not saved. An incomplete series was obtained near Series III (eight feet distant) from an area four feet by six inches. The pebbles were obtained by passing the sand through a screen of 7.75 meshes per inch. These samples were subdivided by a screen of 4.75 meshes per inch, the subdivisions weighed, and the number of pebbles larger than the 4.75 mesh counted. These values are given in the following table as well as the weight of smaller pebbles in percent of the totals.

Depth	Weights (grams)		Number of Large Pebbles	Percentages of Small Pebbles
	Small Pebbles	Large Pebbles		
0	5.0	65.3	20	7.1
1	7.1	20.2	16	26.0
2	6.9	55.3	12	11.1
3	5.7	52.5	16	9.8
4	5.3	64.5	24	7.6
5	4.4	88.8	18	4.7
6	5.2	207.0	14	2.5
7	5.4	51.6	16	9.5
8	5.0	14.8	19	25.3
9	5.7	7.2	14	44.2
10	4.8	13.4	19	26.4
11	6.9	14.1	8	32.8
12	7.6	89.1	19	7.9
13	8.5	20.5	31	29.4
14	10.9	24.1	21	31.2
15	11.4	104.7	24	9.8
16	10.4	17.8	23	36.9
17	10.2	13.3	25	43.4
18	14.0	13.4	26	51.1
19	18.7	21.6	37	46.3
20	21.2	29.5	40	41.7
21	19.9	53.1	55	27.3
22	31.6	29.7	53	51.4
23	32.0	49.4	51	39.3
24	38.3	36.4	58	51.3

We note that in this series the weight of small pebbles[1] and the frequency of large pebbles increases from about the twelfth inch down. Since this corresponds closely with the nearby Series III, it seems likely that this incomplete series was symmetrical but was broken off at about the modal point. If this is so, then we have for both small and large pebbles a phenomenon comparable to that already noted for artifacts and counted pebbles. In other words it does not matter how we select our series — by size mechanically as just shown, or by count of pebbles of appreciable size, or by selection of worked objects — we always arrive at the same result. This can only be the case where pebbles of all sizes and artifacts form together a homogeneous series.

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[1] It is obvious that we obtain a smooth series for small pebbles but not for large only because both limits of the small pebble class are fixed and close together, giving pebbles of uniform size, while only the lower limit of the large pebble class is fixed giving pebbles of varying sizes.

Pebbles (including artifacts) form an integral component of the sand. Within the vertical limits of a pebble group[1] the stratum has a variable composition. Beginning at the upper limit pebbles of any given size increase to the modal point and decrease to the lower limit. Not only do large-sized pebbles occur most frequently at the modal point but all pebbles of appreciable size occur most frequently there. That is, the sand is coarsest at the modal point. In the last column of the table above are given the proportions of small pebbles to all pebbles collected. While the values are rough, the percentages increase with depth, i. e., the small pebbles increase in proportion to all the components of the sand faster than the large pebbles. This means that the stratum has a differential composition.

It is obvious that the pebbles described above comprise only a minor fraction of all components. There is a smooth gradation of sizes of sand grains from impalpable dust up to the largest pebble or boulder, with an average size smaller than our smallest pebbles. The distribution of sizes varies from group to group. The following data giving proportions by weight and percent are available.

Sieves used in Separation (mesh per inch)	2	2–4.75	4.75–7.75	7.75–12.4	12.4–18.	18.—	Total Weight of Sand (grams)
Size $\left(= \frac{1 \text{ inch}}{\text{Lower limit of class}}\right)$	0.500	0.211	0.129	0.081	0.056		
Series tabulated above	1157.3		302.1				216150.[2]
Spoil-pile, Trench A	242.7	505.1	470.2				———
Sample collected by Volk	517.9 *7.9*	1632.7 *24.9*	422.8 *6.5*	101.4 *1.5*	372.5 *5.7*	3500.0 *53.5*	6547.3 *100.0%*

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[1] These are only the limits within which I investigated, of course.

[2] Estimated.

The second sample has a decidedly asymmetrical distribution of sizes, with the average grain or pebble of very small diameter; the first may be similar.[1] Volk's sample apparently has a bi-modal distribution, with an average for pebbles about 0.3 inch and for sand grains less than 0.056 inch. In any interpretation of artifacts as pebbles, it must be noted that they are, for the most part, very flat, two diameters greatly exceeding the third.

The second geological feature to be considered is the system of red bands. The yellow sand is traversed by red layers or films (appearing as bands in section), which occur at frequent intervals from a few inches below the surface soil down. I have mapped the red bands as seen along the side walls in Trench B, accessible parts of Trench C, and in Trench D, connecting Trench 1 with Pit 1 (Fig. 11). On account of their irregular character the bands were difficult to trace from point to point. Short breaks in the bands have been bridged over, so that the sketch suffers slightly from over-systematization. However, no breaks or changes of any importance were ignored. The width of the band is drawn approximately to scale. As a general rule, the thinner bands were also proportionately fainter.

The red bands generally lie from four to six inches apart. At any point along Trench B a vertical section shows the wavy bands progressively more distinct, compact, and wider from surface downward. The red bands are sections of warped planes tilted in the same direction as the present surface but on a lesser grade. They therefore approach and eventually reach the present surface. Each band becomes thinner as it approaches the surface, decreasing from two to four inches thick at its greatest depth to a mere thread at grade.

It will be noted that several bands are often fused into one, the width of which is variable, sometimes equal to the sum of the width of the individual bands, and again equal to the width of only one. Two bands may be pointed out which can be traced for a considerable distance and which exhibit this feature: the band AA′ beginning at 4 ft. 8 in. below the surface at the point 211 on the profile, reaching the surface soil 71 ft. west (point 140), the drop of the surface being 4 ft. 11 in. in this distance, that of the band 10 in.: also the band BB′ beginning 5 ft. 1 in. below the surface at the point 176, reaching the surface soil 74 ft. west (point 102), the drop of the surface being 5 ft. 4 in., that of the band 6 in.

I presume that the bands, or rather planes, are parallel with the surface of Trench C, throughout its length. In the eastern part of this trench, it will be noted that the bands parallel the surface: most prominent among them being a wide and compact band in the central portion of this section which disappears abruptly.

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[1] Gilbert, (a), 177, tabulates data for a natural fluviatile mixture which shows the same asymmetry.

On the sketch will be found several isolated portions of red bands, also others ending not at the surface soil but at some point in the yellow sand. These could not be traced beyond the limits shown.

Of interest is a hard layer of black material appearing at the western end of Trench B and in the middle of Trench C. This band closely resembles the red bands in position, thickness, compactness, etc. Fragments of the same material are frequently encountered throughout the yellow soil and might be mistaken for charcoal.

The bands extend throughout the deposit from Lalor field to the Abbott farm. They always occur "in the same order and composition" according to Volk, but showed a different arrangement [1] in a few instances.

Wright gives an analysis of a series of bands in Lalor field: —

Stratum	Thickness[2]	Percent of Clay	Percent of Iron
Sand	7″	18	—
Red Band	½″	24	—
Sand	6″	16	0.5
Red Band	2″–½″	27	1.5
Sand	4″	14	—
{ Red Band		27	—
{ Sand	2″–3″ } 10″	—	—
{ Red Band		37	1.5
Sand	—	7	—

These red bands, therefore, are not to any appreciable extent segregations of iron. The iron scarcely more than suffices to give the color. The analysis shows, therefore, that these red bands contain from 25% to 33% more clay than is found in the interstratified strata of sand.[3]

Kümmel states: —

> that the 'red clay films' observed at various intervals in the sand are not, in my opinion, lines of stratification at all, nor are they always strongly clayey. They are partly, at least, zones or bands of infiltration and deposition of ferric oxide which has somewhat cemented the sand grains.[4]

Wright's analysis refers to the same trenches from which Mercer's 1897 series were taken. These gave average depths for artifacts 9.8 ± 4.87 and pebbles 11.7 ± 5.96. The bulk of artifacts and pebbles fell in the second sand stratum. The red planes cross the group but may have no causal relation to it. Similarly with Series I (Trench 2) there were no red bands; Series IIa and IIb (Trench 1) thin, faint bands at 13, 15, and 18 inches with averages of series 9.9 ± 4.35 and 10.2 ± 4.67; Series III (Trench B) a heavy band at 44 inches with averages of artifacts 18.8 ± 4.84 and pebbles 21.2 ± 3.8; Series IV (Trench C) faint bands at 3, 5, and 19 inches and heavy bands at 28 and 33–35 inches with average of 8.0 ± 3.21; Series V (Trench C) a faint band at 12 and heavy bands at 24 and 30 inches with artifact and pebble averages of 7.0 ± 2.88 and 9.1 ± 4.37; and Trench 3 with a faint band at 5 inches and heavy bands at 11, 18, 26, 32, and 36 inches with the artifact average of 7.6 ± 4.66. In other words the seriation of red bands and pebbles is not the same, but occurs in variable relations.

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[1] Volk, (b), 7, 103–15.

[2] Beginning below a "zone of doubt" of 15 inches.

[3] Wright, 358.

[4] Kümmel, 348.

Dr. Chester A. Reeds suggests that the red bands represent films of clay and decomposed iron bearing black mica (biotite) which have been subjected to the periodic oscillation of the ground water level and oxidation. The iron serves as a cement and if present in considerable amount binds the sand, pebbles, and clay together forming "peanut rocks" when indurated. The position of the ground water level at present is indicated by the following data.

Position	Point on Profile (Fig. 3)	Depth below Surface (feet)	Height above Flood Plain (feet)	Grades
Abbott's Brook	1061	Brook bed	47.5	1.21
Trench C, east end	664	7.3	42.7	1.26
Trench A	315	12.5	38.3	1.64
Trench B, west end	53	4.5	34.0	
Abbott's Brook	31	Brook bed	34.5	
Trench 1	(190)	3.3	43.9	
Well	−389	4±	25.5±	
Spring at Bluff	−554	Face of bluff	25.5−	

These grades are, of course, less than the surface grades.

These data show that the artifacts are one component of a series of pebbles which extend throughout the sand deposit, at least in the vicinity of the bluff, in a single plane of maximum deposition. Inasmuch as all the pebbles, from boulders down to sand grains, are an integral part of the sand deposit it necessarily follows that a single cause of deposition has acted on artifacts and sand alike. Earlier investigators have variously favored the following causes of deposition: occupation of the site with accidental inclusion of the artifacts in the sand by the action of wind or water, or the deposition of sand and artifacts by a stream aggrading its bed.

Assuming that the distribution curve characterizes the occupation of the site, it can be compared, Wissler suggests, with distributions in culture deposits. A number of pottery tables for the ash heaps of Southwestern ruins are available. Only the total number of fragments representing the fluctuations of the whole ceramic art give distributions comparable to the series at Trenton since that represents the culture as a whole. It is assumed that the intensity of the ceramic art was uniform, and therefore fluctuations in the quantity of sherds indicate corresponding changes of population. Nelson's San Cristobal table [1] shows relative uniformity in the total number of sherds at each level, at least there is no progressive rise or fall in these values. Kidder's Pecos tables [2] give similar results in all cases. In both pueblos certain types of pottery give distributions of the normal type: San Cristobal type I and type II redware, and Pecos Test X glazed ware. But these are not comparable to the Trenton series since they represent fluctuations in single cultural traits — stylistic pulsations — which attain their maxima at the expense of other similar traits. Similar series could be obtained at Trenton for every culture trait — various types of arrowheads and blades — but these would give normal curves merely because the entire group was of that form. These stylistic series are not comparable with the whole Trenton series. I have found that ash heaps at ruins in the Zuñi country give a variety of distributions.[3] Sites 97, 104, 121, 139, and 161 show relatively uniform distributions; Sites 71, 146, and 152 an increase in the number of sherds. At Site 140 the section within the pueblo gave a rather uniform series, possibly with a decrease at the start and an increase at the end, while the section outside the ruin shows an increase. At Site 48 the two sections are stylistically equivalent, but the second shows a decrease in the number of sherds. Site 33 alone gives a normal curve. This does not require individual treatment but is susceptible of explanation in common with the others. All of the fluctuations must represent either changes in the entire population or, as at Site 48, a shift in the use of the refuse heap. It is most probable that at Site 33 the distribution represents the growth and decline of the pueblo as a whole. A similar case is given by Gamio for Teotihuacan.[4] In the refuse at this city the pottery has a distribution resembling the normal type, but with two maxima of frequency. Gamio suggests that the curve reflects the occupation of the city as a whole, with the two maxima coinciding with architectural changes. In this case also a single style, the Aztec type, gives a normal curve. I have checked out the distribution of objects in a shell-heap reported on by Loomis and Young [1]: since this series includes all artifacts it is more strictly comparable to the Trenton series than the pottery distributions. Aside from the well-known phenomenon of "rounding-off," the distribution is clearly uniform and therefore unlike the Trenton series.

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[1] Wissler, (a), 195.

[2] Kidder, 342–347.

[3] Spier, (e), 256–262.

[4] Gamio, Plate II.

So far as these cultural data go, they show that normal curves may be expected as a result of a rise and decline either of the intensity of a cultural trait or of the whole population. The first is out of the question at Trenton; the second seems unlikely, since the pebble distribution and the horizontal alignment of the artifacts over a wide area are against such an interpretation.

Direct comparison with the distributions in a known water deposit is possible with only one series, collected by myself; I have been unable to find any published records of others.

This series was taken from a superficial sand deposit [2] which presented conditions closely similar to those at Trenton. The sand was light and loose, and relatively free from pebbles. Smaller pebbles were more common at the modal point of the series than at the extremes of the range. Overlying the starting point of the series was 20 inches of clear sand.

Depth Below Surface. (Inches)	Frequency.
20	5
22	21
24	49
26	60
28	38
30	128
32	180
34	100
36	72
38	33
40	28
42	20
44	14
46	10
48	0
50	2

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[1] Wissler, (a), 196.

[2] At the Havasupai Indian village in Cataract Canyon, a tributary of the Grand Canyon of Arizona. In 1910 a devastating flood completely redistributed the sand floor of the canyon. The series had to be made surreptitiously and is therefore not very accurate.

This series represents a normal frequency distribution, with perhaps a suggestion of asymmetry, i. e., with a slightly greater range in the lower depths.

Water deposited pebbles undoubtedly occur in other distributions, but the identity of this distribution with the Trenton series clearly indicates the possibility of water having deposited that series.

CULTURAL TRAITS.

Cultural traits preserved in this deposit are few. There is no evidence of the type of occupation with which the artifacts were associated. As the deposit stands, it clearly does not represent a village site: Volk's references to "work shops," "fireplaces," and "pits" which point in that direction are susceptible of other interpretations (p. 187).

The artifacts are of a few and simple types and all of stone. These are arrow-heads and larger chipped blades, pitless hammerstones, and one rubbing stone. The bulk of the objects found were mere flakes, which may include scrapers and, in addition, some fractured pebbles.

The several types of chipped forms were determined by a series of trial groupings: the types which are recognized are the groups with the greatest number of representatives. The number of specimens definitely recorded from the yellow sand is small, sixty-six. To these I added ninety-six others of the same general form and patination but taken from the layer of sand which Skinner had included in his "zone of doubt" (p. 180). While a few of these may be of Lenapé origin the majority belong with the older culture since I found the same relative distributions of both series of specimens in the type-groups. Thirteen types were determined by inspection, the specimens mixed and distributed into thirteen groups three times. Specimens, which fell twice in one group and a third time in another were included with the first group. Specimens, which fell successively in three groups were included with those nearest in form. The number in each group is given in the following table: —

Group	Arrow-heads								Large Blades					
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	Totals
From yellow soil	17	11	2	7	2	4	7	1	4	3	2	6	0	66
From "zone of doubt"	35	13	3	3	0	13	15	1	3	1	4	3	2	96
Totals	52	24	5	10	2	17	22	2	7	4	6	9	2	162

The typical forms of arrow-heads are I, II, IV, VI, and VII, and of large blades IX, XI, and XII (Figs. 6, 7, and 8).

Type I is the so-called "fish-spear,"[1] a long slender blade of rather rounded cross-section, as frequently notched as stemmed and occasionally

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[1] Abbott, (d), 267.

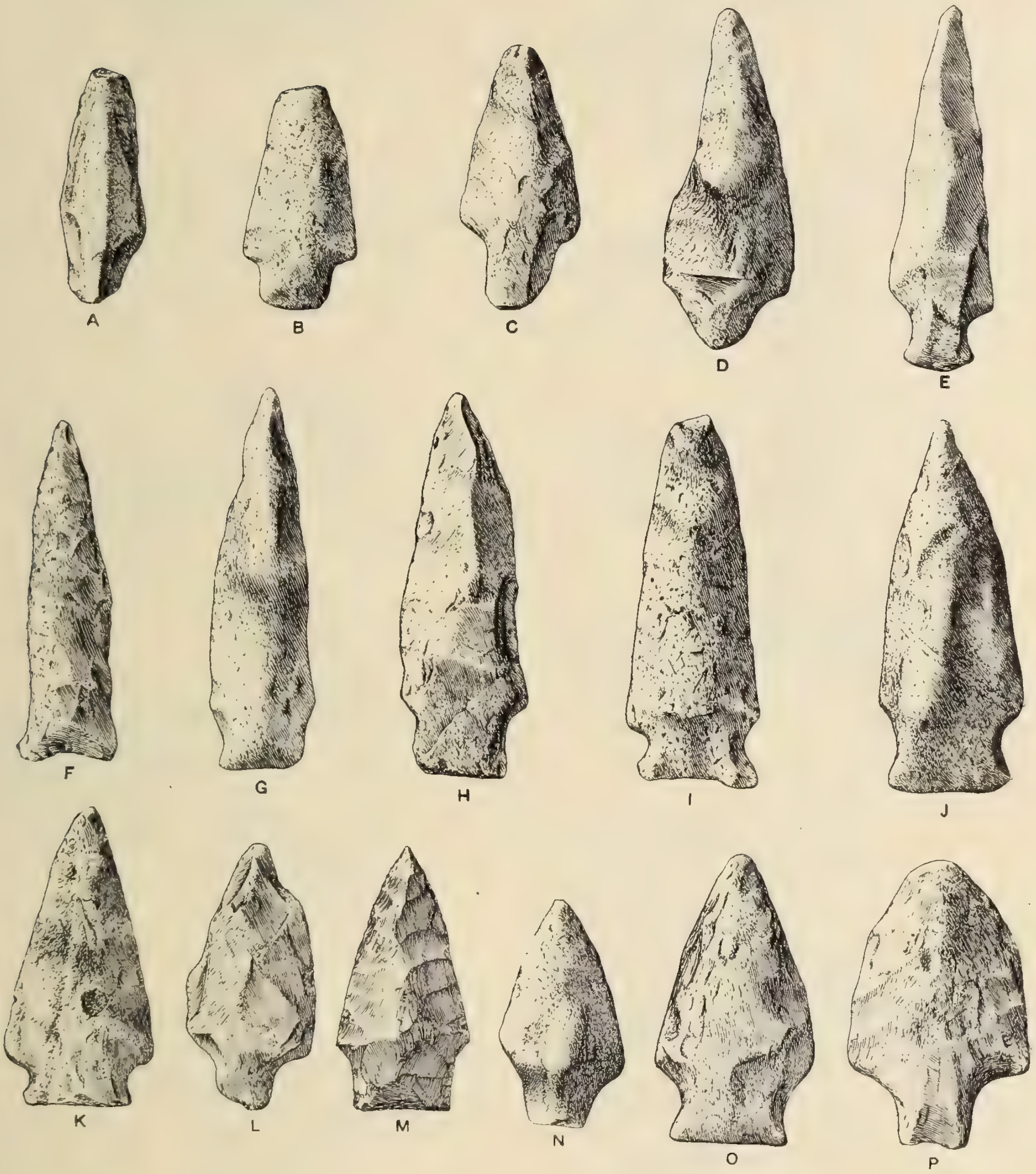

Fig. 6 (20.0–7414, 7319, 7310, 7307, 1448d, 7455, 8102, 7315, 7378, 8261, 8147, 8177, 8107, 7398, 7473, 7474). Arrow-heads: Types I (a–j) and II (k–p). ½ Nat. Size.

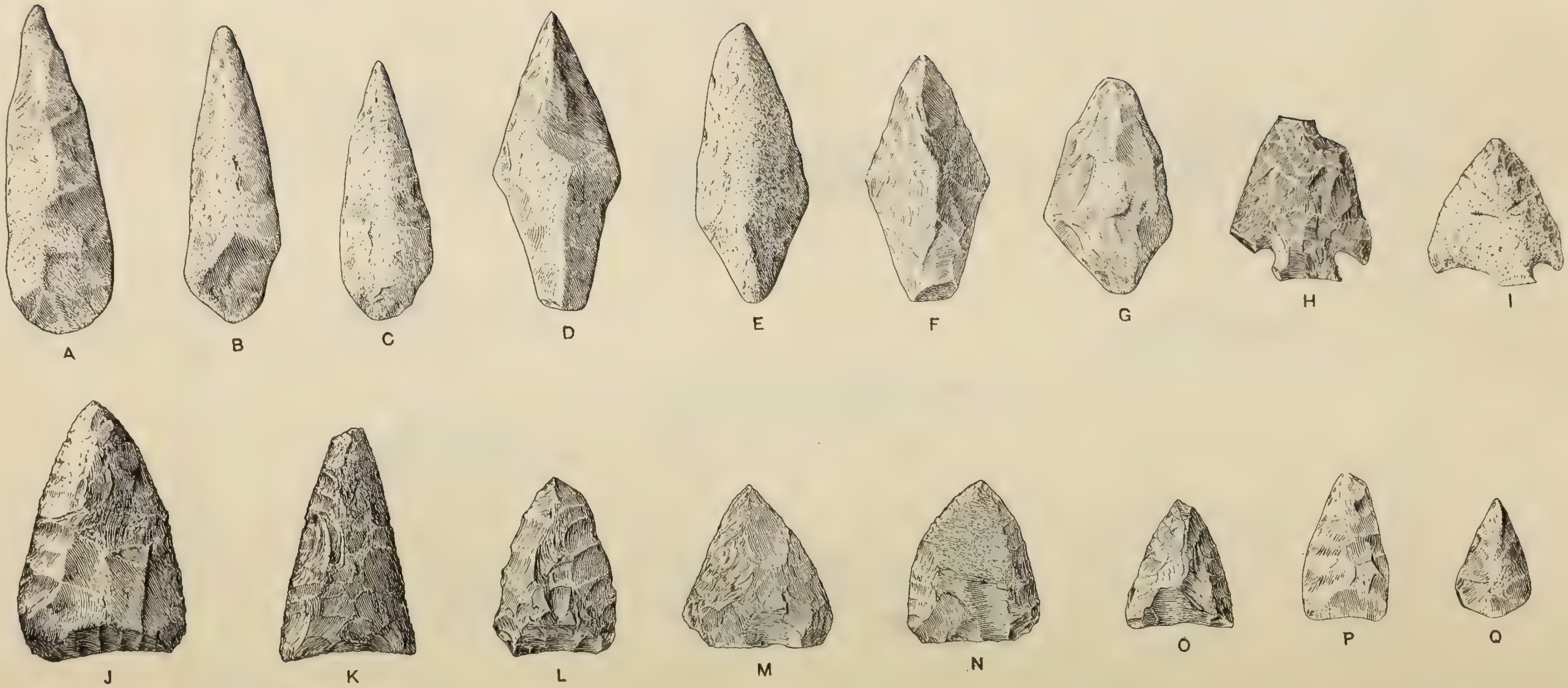

Fig. 7 (20.0–7420, 7382, 7379, 7309, 7533, 7350, 8187, 7530, 7311, 8118, 7401, 7526, 7539, 7536, 8175, 8165). Arrow-heads: Types III (h, i), IV (a-c), V (q), VI (d-g), VII (j-o), and VIII (p). $\frac{1}{2}$ Nat. Size.

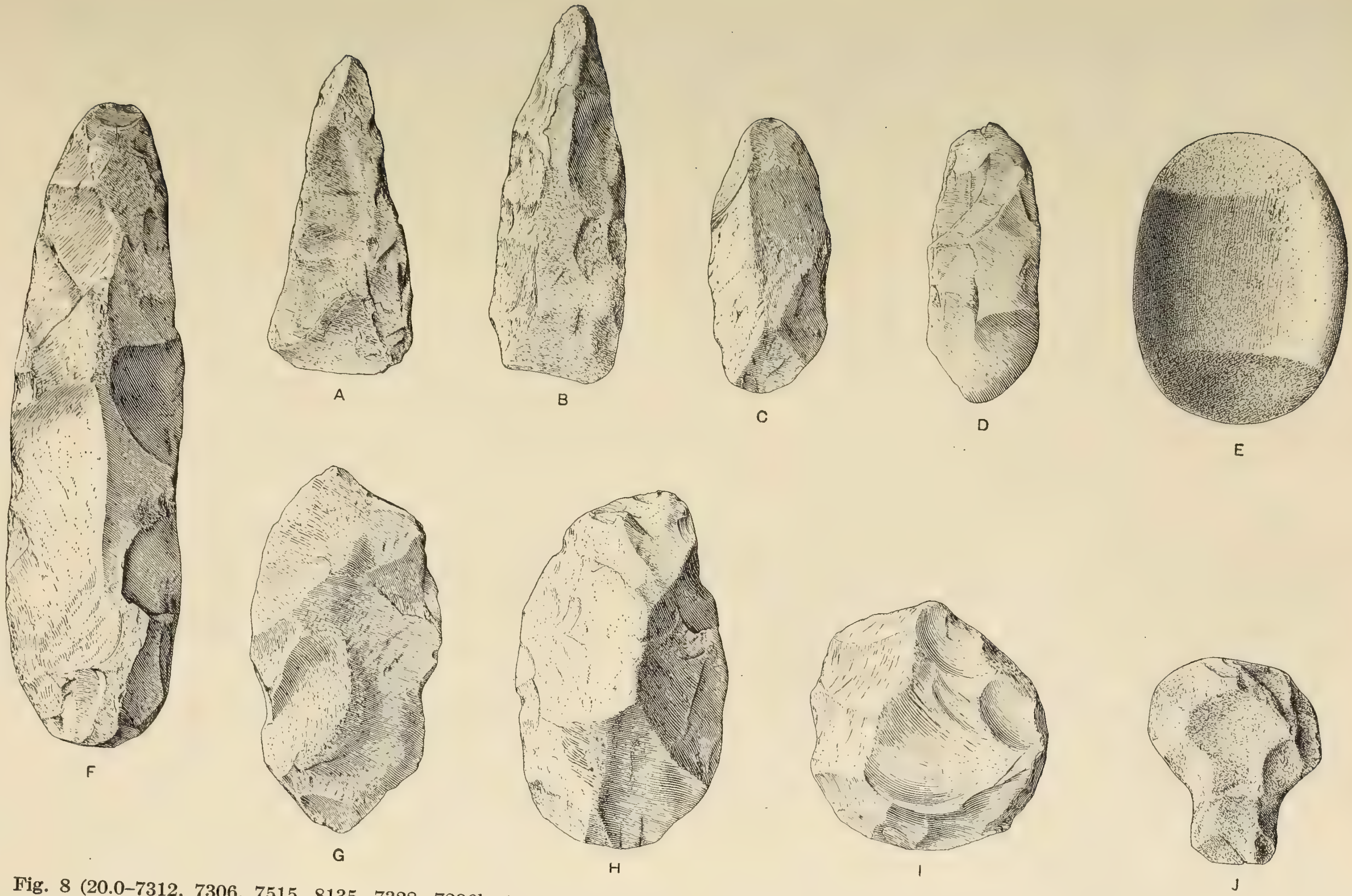

Fig. 8 (20.0–7312, 7306, 7515, 8135, 7328, 7296b, 7363, 7300, 7570, 7566). Large Blades: Types IX (a, b), X (f), XI (c, d), XII (g-i) and XIII (j); and Rubbing Stone (e). ½ Nat. Size.

with a marked flare of the edges at the base instead. Type II is a broader, thinner blade, notched or stemmed. Some of the smaller specimens of Type II are indistinguishable from smaller points of Type I. Type III is a small triangular thin point, deeply notched from the base edge. Type IV is a long slender point, like Type I of oval cross-section, and with a round base. Type V is a much smaller and broader point of the same type.

Type VI is small, lozenge-shaped, the base being somewhat blunter than the point; in the cross-section the blade is trapezoidal or oval. Type VII is small, triangular, and flat; the base is sometimes incurving. Type VIII is similar to Type VII, but the forward edges are convex.

Of the larger blades, Type IX is long, sharply pointed and with a straight or rounded base. Type X is a long, flat blade with parallel edges and round ends. Type XI is similar but is shorter and proportionately broader. Type XII is a flat oval or round blade equally chipped on all edges. Type XIII is shaped like a longitudinal section of a mushroom with the cutting edge at the top. This may be the butt of a longer blade which, when broken off, was worked over.

The workmanship of these chipped blades is not crude but does not equal the best of Lenapé specimens. They seem to be entirely chipped; some may have been ground or rubbed in addition but the disintegrated surface gives no clue of such operations.

Pitless hammerstones are merely more or less battered pebbles and without distinctive features. One of these, a small boulder (20.0–8211), has two parallel faces ground smooth. The single rubbing stone (20.0–7328) (Fig. 8) is a pebble with four ground or rubbed facets at the ends. It resembles a very blunt double-edged ax: in longitudinal cross-section it is six sided.

The additional finds were stone flakes some of which may be scrapers, a few broken pebbles, possibly fire-fractured, and fragments of human bones.

This exhausts the list of cultural remains. Our smaller series agrees with Volk's five types collected during a period of twenty years: the spear head, arrow-head, an implement with a jagged cutting edge, a drill-like specimen, and the hammerstone. The paucity of cultural traits is emphasized by comparing this list with the multitude of forms known to the Lenapé and which are found in the black soil immediately above. Dr. Abbott's older works "Stone Age in New Jersey" and "Primitive Industry" are not precise enough for a detailed comparison but cover the range of Lenapé remains fairly well. I reproduce below a list of Lenapé forms prepared by Mr. Skinner.[1] Types marked with an asterisk also occur in the "argillite culture."

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[1] Skinner, (b), 53–54.

- I Chipped Stone
  - * Large blades
  - * Spear points
  - * Arrow points
  - Drills
  - * ? Stemless scrapers
  - Stemmed scrapers
  - Bizarre chipped forms
- II Rough Stone
  - * Pitless hammerstones
  - Pitted hammerstones
  - * Rubbing stones
  - Arrow smoothers
  - Sinew stones
  - Pestles
  - Mortars
  - Grooved axes
  - Celts
  - Grooved mauls
  - Grooved clubs
  - Grooved sinkers
  - Notched sinkers
  - Perforated sinkers
  - Ceremonial stone heads
  - Gouges
  - "Slick stones"
- III Polished Stones
  - Gorgets (two types)
  - Banner stones
  - Stone tubes (several types)
  - Stone pipes
  - Other objects
- IV Engraved Stone Objects
  - Portraits
  - Animals, etc.
- V Native Copper
  - Spears
  - Arrows
  - Celts
  - Beads
- VI Pottery
  - Vessels
  - Pipes
  - (Many types of both)
- VII Bone and Antler
  - Awls
  - Cylinders
  - Arrow points
  - Other objects
- VIII Shell
  - Beads, etc.

This list is not exhaustive but shows the range of Lenapé forms. The number of types common to both cultures is small; whole classes of objects are not represented in the "argillite culture." Of course, it is possible that perishable materials, such as wood, shell and bone, played a large rôle in the older culture but have not been preserved. The absence of shell and bone artifacts is noteworthy, since parts of two human skeletons were found. While the remains were fragmentary, they were sufficiently preserved for identification.

In detail the types of arrow-heads in the "argillite culture" are fewer than in the Lenapé remains. While I have no precise data on the point, this can be easily seen in any representative collection.

The list of missing traits is impressive. Pottery is entirely absent: there is no evidence of drilling in stone: net-sinkers are also absent, as well as the finer types of stone implements. No foodstuffs were found so that is impossible to say whether the absence of pottery is connected with the absence of maize.

All of these finds corroborate the contentions of Abbott and Volk that we have a simple older culture here set over against the comparatively rich and varied culture of the historic Lenapé. While the older culture is rude, it is not crude.

Earlier investigators have objected to the asserted position of the "argillite culture" on the grounds that such objects had worked their way down from the black soil into the yellow sand through root holes, uprooted trees, by the agency of burrowing animals, or by other similar accidental means. It is inconceivable that such a segregation of objects should have brought about a cultural distinction.

All of the objects from the yellow soil constitute a homogeneous unit; that is, we have found nothing that we may not refer to a single culture. It would be interesting if there was a sufficient number of specimens to see whether there is any vertical differentiation of types. The tabulation above of the thirteen groups of objects gives us something of the sort. Here the "zone of doubt" includes the uppermost twelve inches or so of yellow soil; the other specimens are from a wider vertical range including this zone. There is no significant difference between the two groups. It is unlikely that any such differentiation would be found in view of the manner of distribution of the artifacts and pebbles.

The name "argillite culture" was applied to these remains by earlier investigators who asserted that the stone used was argillite alone or that argillite predominated.[1] Certainly most of the objects are alike to the superficial observer. They are characterized by an alteration of the surface to a chalky consistency with a characteristic greenish or yellowish gray color. A series of these objects with a few similar specimens from Staten Island were selected by Dr. C. A. Reeds and forwarded to Dr. J. Volney Lewis for identification. Dr. Lewis found that these were argillite, hornfels, sandstone, and siliceous oolite. Argillite constitutes over half of the series. The relative abundance of the materials is in proportion to the proximity to Trenton of outcrops of the same in northern New Jersey and adjacent sections of New York and Pennsylvania. The implements may have been made from river pebbles or from pebbles in the stratified drift of the Cape May formation, in which, of course, their relative abundance is naturally the same.

Dr. Lewis's statement concerning the age of the artifacts is worth reproducing in full.[2]

> From the petrographic examination of the materials alone no very definite conclusions can be drawn as to their age, but some of them are manifestly very old. Several of the blackish argillites are so bleached and altered that they are now a pale

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[1] Artifacts of argillite were first recognized by Prof. M. E. Wadsworth.

[2] Lewis, 201.

yellowish gray, and the bleaching has penetrated so far that only the central portion, or even a small central spot, retains the original color. These conditions are notably shown in Nos. [20.0–] 7303, 7448, 7476, 7485, and 7517, from Trenton, and in No. 4227 from Staten Island. One specimen from Trenton (No. 7485), undoubtedly a bleached argillite, is pale grayish in color throughout. Also the reddish quartzite from Trenton (No. 7333), originally a dark grayish rock, now has only a small central spot of this color.

The great age of these specimens is beyond question. They have been bleached by long exposure to the weather and the shallow ground waters since they were worked into their present shape. This process, especially in the dense argillites, is a very slow one, as may be seen in the natural outcrops of these rocks, which are decolorized to only a shallow depth as a rule.

On the other hand, some of the specimens are in a comparatively fresh condition, even on the surface. Apparently these are either less ancient or they have been imbedded in soil of a denser texture and hence have not been so fully exposed to the weather and the percolating ground waters.

SKELETAL REMAINS.

As a positive contribution to this subject I have only a mass of fragmentary bones without any definite character. In addition it is necessary to review some of the published accounts of skeletal material supposed to be associated with the argillite culture. It should be obvious that the only finds which can be considered in this connection are those with a definite association by virtue of their stratigraphic position.

The new remains are the series of bone fragments from Trench I considered above (Series II b). The fragments are very small and their identification was made possible only by the fortunate inclusion of three *ossa temporale* (Fig. 9). They have been identified by Dr. William K. Gregory and Mr. Louis R. Sullivan as the remains of two adolescents. Mr. Sullivan's report is given in the following paragraphs.

As a whole, the total series of several hundred bone fragments are very small and for the most part lack the distinctiveness necessary for specific identification. By far the greater number of them represent fragments of long bones. In only one instance does a fragment represent an entire cross-section of the shaft. About twelve of the fragments exceed an inch in length but the remainder are much smaller.

In the cranial fragments we are more fortunate in having preserved five fragments which may be positively identified as representing portions of the pars petromastoid of three ossa temporale of a mammal. Three of the five fragments represent that portion of the pars petrosa bearing the internal acoustic meatus and subarcuate fossa. In these specimens the subarcuate fossae are mere pits. According to the findings of Dr. William K. Gregory this condition of the subarcuate fossa is characteristic of man and the higher anthropoids only; all other mammals have the subarcuate fossae open. The higher anthropoids are at once eliminated by their absence from America.

When we compare these specimens with the pars petrosa of an adolescent individual we find almost an identity in the conformation and position of the internal acoustic meati, subarcuate fossae, and arcuate eminences. Two of these fragments, undoubtedly, form a pair while the third represents the pars petrosa of a third left os temporale. Further comparison with the same skeleton enables one to identify other fragments as follows: a portion of the processus fronto sphenoidalis of the os zygomatium, portion of the pars orbitalus of the os frontale, various portions of the os occipitale and other bones of the brain case, three portions of the shaft of the tibia, one fragment of the head of the tibia, two fragments of the femur, the inferior articular process of a lumbar vertebra and the superior articular process of a dorsal vertebra.

There is no reason to suppose that these fragments represent more than two individuals. It also seems safe to say that they represent the fragments of human skeletal remains of two adolescent individuals.

It was noted above that these fragments were found among artifacts having an identical distribution (Series IIa). Since the fragments were all

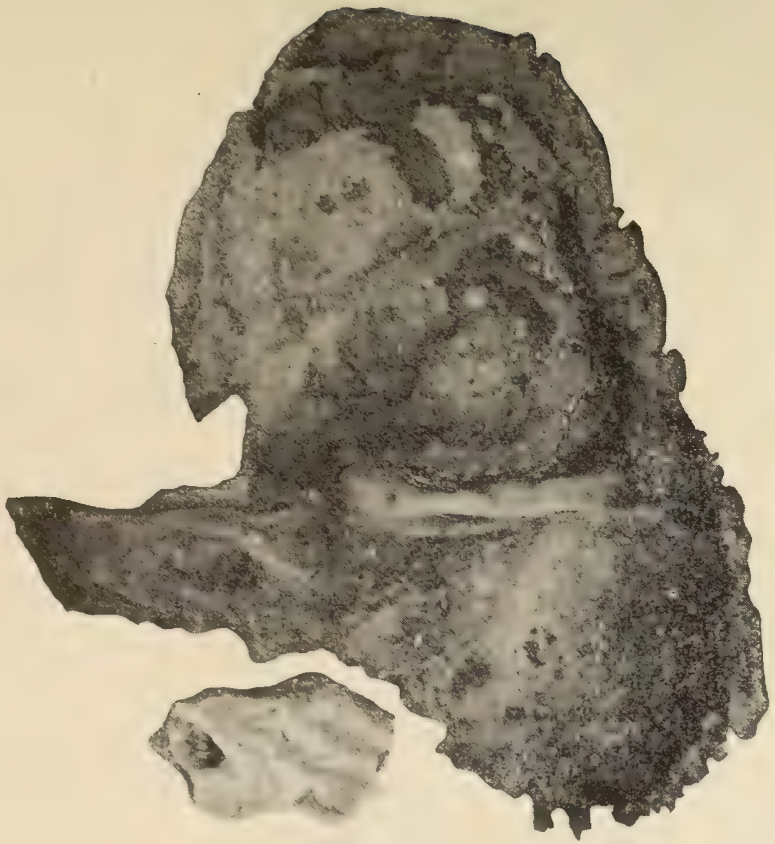

Fig. 9.

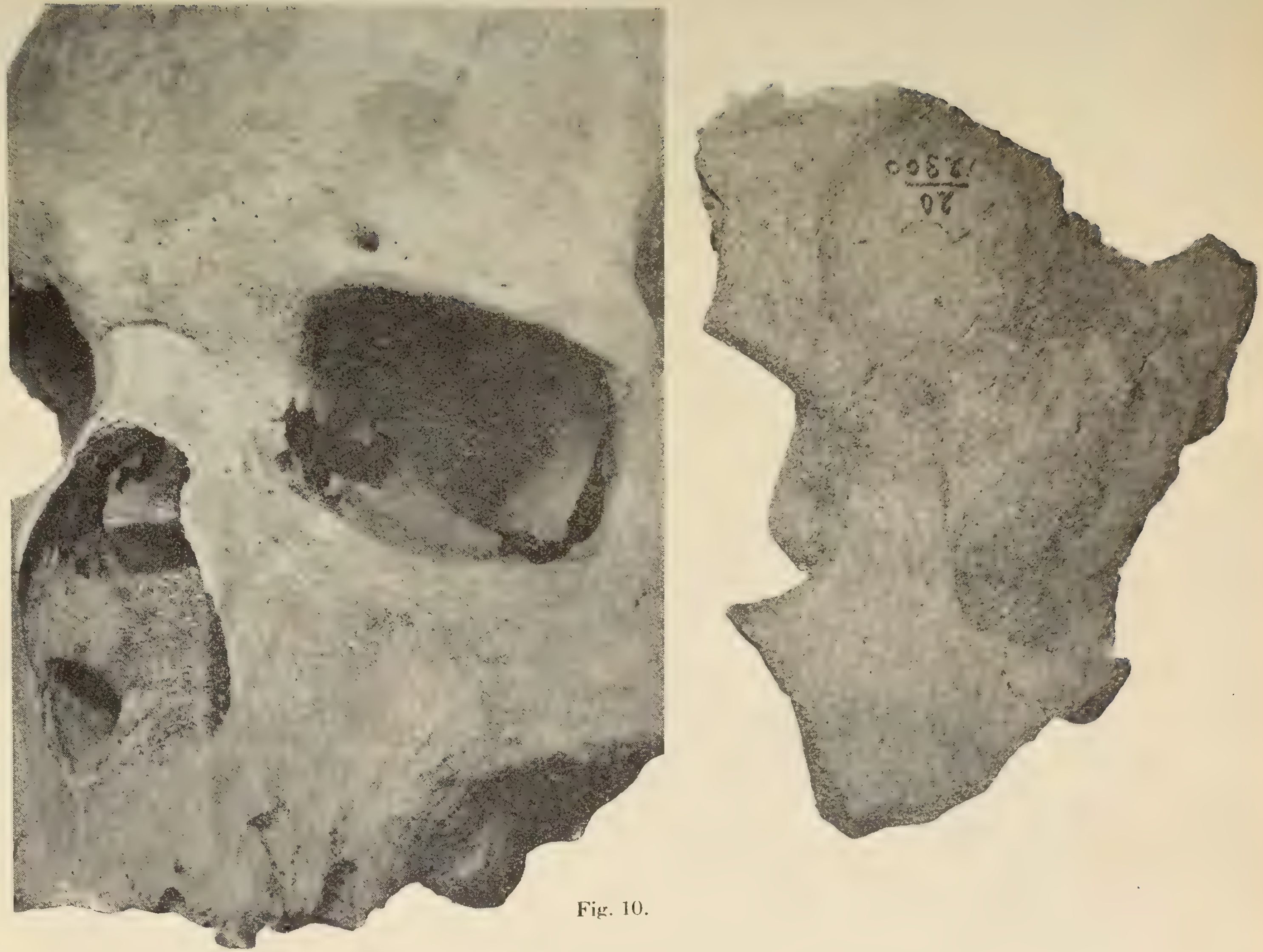

Fig. 10.

Fig. 9 (20.0–7107). Ossa Temporale of an Adolescent Individual and a Fragment from Trenton.
Fig. 10 (99–6598, 20–12300). Obliquely Placed Orbits from Trenton and of Skull from a Grave at Orangeport. New York.

found within a diameter of three feet and represent only two individuals, it is evident that the entire series must have been deposited at about the same time. There is nothing in their arrangement to suggest a burial. Since the fragments cannot be separated and assigned to the two individuals, I do not know whether the two occurred separately: it seems unlikely.

A number of skeletal remains from this region have been reported on by Russell and Hrdlička in view of their possible association with early remains. These consist of a piece of frontal bone, a fragment of a lower jar, a third molar tooth, a portion of a femur, three skulls named after the localities in which they were found, "Gasometer," "Burlington County," and "Riverview Cemetery," and pieces of crania, long bones, etc., from the "deep burials" on the Abbott farm. Abbott and Volk suggested the association of the frontal bone, the lower jaw, the molar tooth, and the femur with the gravels in which they were found (and with their "paleolithic culture"). They are then of no concern for the argillite culture. The "Gasometer" skull, found in the southern angle of the junction of Assanpink Creek with the Delaware at a depth of twelve feet, lay well outside of the area in which Volk found the remains of the argillite culture. The "Burlington County" skull which was found at Sykesville, Burlington County, about twelve and a half miles southeast of Trenton, where it rolled out of the bank of a brook, also lay outside of the culture area. While both of these skulls may have an intrinsic interest because of their geological position or morphological character, there is no legitimate reason for connecting them with the argillite culture. The "Riverview Cemetery" skull presents a slightly different case. It was found in an elevated part of the cemetery at a depth of about three feet. Since the point at which it is found is not far from the culture area and its depth not greatly divergent from the normal depth for cultural remains, there is a possibility that this skull should be considered with the culture. On the other hand, Volk defines the culture as beginning at the Riverview Cemetery and extending east and south. Presumably, he does not include the cemetery and nowhere else does he speak of cultural remains having been found there. The skull has certain peculiar characters which it shares with the "Burlington County" skull, according to Hrdlička, and is similar to a local European type.[1] The affiliation of this skull is, therefore, not clear: it seems unlikely that it is associated with the argillite culture.

The "deep burials" from the Abbott farm were found by Volk in 1899. They were taken from a trench running eight feet from the ravine cut perpendicular to the bluff by Abbott's Brook; the first two heaps of bones

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[1] Hrdlička, (b), 36–46.

(Volk's Fig. 21, e and f) being found about twenty feet back from the bluff and the third (Volk's Fig. 21, d, catalogued as two heaps) about twenty-five feet further in. The heaps lay from four to four and a half feet below the black soil at the base of the yellow sand stratum.[1] In the heap "farthest south" (f?) was found an argillite implement. These groups lay below the plane of maximum frequency of artifacts. Their position is at the extreme edge of the sand stratum where it abuts on the higher Pensauken terrace. Abbott's Brook, which follows the margin of the two deposits, must be a comparatively old drainage trough. Since the heaps were so close to the brook, there is a possibility that at some time they were moved within the deposit or introduced from elsewhere at a time when the brook was reworking its bed. Inasmuch as the little brook has cut a ravine thirty or forty feet deep at this point, such a redistribution must be comparatively old. In any event the bones have some antiquity; whether they are in definite association with the argillite culture is not clear. In view of this possible connection and because of their intrinsic interest, Mr. Sullivan has furnished the following report: —

I have been asked to examine four lots of human bones representing the "deep burials" excavated by Mr. Volk. All the bones came from the same trench but from two distinct "graves" in lots of two heaps each. The bones now catalogued in the American Museum of Natural History as 20–12300 and 20–12302 (probably Volk's Fig. 21, e and f, respectively) were found close together in one part of the trench and those catalogued as 20–12321 and 20–12324 (probably Volk's Fig. 21, d) were found in close association in another part of the trench. Most of the bones were fragmentary and showed considerable degrees of disintegration. Lots numbered 20–12300 and 20–12302 were in a slightly better state of preservation than lots numbered 20–12321 and 20–12324. In all we have parts of at least seven skeletons, distributed as follows:—

Catalogue 20–12300:—
- Portion of a right parietal.
- A nearly complete frontal with small portions of the parietals.
- That portion of the left orbit consisting of a portion of the frontal, sphenoid, and malar.
- The atlas.
- The axis.
- A portion of the left parietal of a second skull.
- The proximal portion of a left femur.
- The acetabular portion of a right innominate bone.
- The distal ends of one right and two left humeri.
- Distal end of a left radius.

Catalogue 20–12302:—
- The right temporal with fragments of the parietal and occipital.
- Another fragment of the right parietal.

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[1] Volk, (b), 101, 102 and chart in American Museum.

A small piece of the left maxilla bearing two molar and one premolar tooth.

The right and left gonial region of a mandible and two fragments representing the right gonial region of two other mandibles.

The proximal and distal portions of a right femur.

A right humerus.

Catalogue 20-12321:—

A small portion of the right orbit.

Greater wing of the left sphenoid and fragments of the palate bones.

Another skeleton is represented by:—

A nearly complete right parietal with a portion of the frontals.

A large portion of the sphenoid.

The basi-occipital.

A nearly complete right femur.

A left tibia.

The acetabular region of the right innominate.

Catalogue 20-12324:—

A large portion of an occipital with a portion of the right parietal and temporal

The right and left femora.

The left ulna.

A right and left tibia.

Fragments of the clavicles and scapulae.

Uncatalogued parts consist of fifty fragments of ribs, thirty teeth, a nearly complete right tarsus and a left calcaneum and cuboid.

In spite of the fragmentary nature of the bones they show certain characteristics pointing to their racial identity. All of the bones must be considered together.

If we examine first the teeth we find among the lot one lateral and one mesial upper incisor. These teeth both show the marked infolded concavity on the lingual surface which is so characteristic of the incisor teeth of American Indians. This would seem to indicate that the bones represent the skeletons of American Indians. The other teeth show no marked peculiarities. Seventeen are molars, seven are premolars, and four are canines. They all conform to the normal dentition of modern Indian skulls.

Examining next the fragments of skulls we find that none of them are of sufficient size to warrant measurements of definitive value. The portions of frontal, parietal, and occipital bones appear to be more or less warped or distorted. One fragment about eight centimeters square representing the external half of the left orbit (20-12300) is of interest and in my opinion throws some light on the identity of the burials. That portion of the orbit remaining represents an unusually low and obliquely placed orbit. At first this appeared to be only an individual variation. Examination of a considerable number of skulls of American Indians showed this particular form of orbit to be of fairly frequent occurrence among Indian skulls coming from the eastern United States. To be more definite, this peculiar conformation of the orbit was found in some twelve eastern skulls. In skulls numbered 20-3190, 99-4717, and 99-6598 coming from Staten Island and northern New York State, the agreement amounted almost to an identity (Fig. 10). None of the other cranial bones showed features of peculiar interest.

The long bones have been described and measured in detail by Dr. Hrdlička. At that time the bones had not been catalogued and arbitrary numbers which have not been preserved were used. For this reason it is impossible to refer to specific bones listed by Dr. Hrdlička. These bones, undoubtedly, belong to large and strong individuals above the average stature. Of special interest are the femora. They show a marked flattening of the proximal portion of the shaft. The following measurements help define that flattening:—

Femora.

Catalogue Number	Side	Transverse Diameter	Sagittal Diameter	Platymeric Index
20–12300	left	3.6	2.3	63.9
20–12302	right	3.7	2.2	59.5
20–12321	right	3.2	2.3	71.9
20–12324	left	3.4	2.8	82.4
			Average	69.4

The absolute measurements of the transversal diameters are of interest. They are rather larger than the average for American Indians. Platymery is fairly common among American Indians yet by no means universal. The collections of the American Museum represent fairly well the distribution of this characteristic on the two continents. I was able to match this degree of flattening in association with femora of the same size only among Indian femora from the eastern United States. Again, to be more specific, comparisons revealing an approach to identity were found in skeletal remains from Long Island, Manhattan Island, and some of the southern New England States. However, very similar femora were found in a skeleton from Patagonia.

In conclusion then it seems safe to infer from the incisor teeth mentioned above that these bones represent the skeletal remains of American Indians. Furthermore, the peculiar conformation of the orbital region and the size and degree of flattening of the femora permit us to conclude with a very high degree of probability that these remains belong to that particular local type of American Indians inhabiting the eastern United States in the neighborhood of New Jersey, New York, and southern New England. The antiquity of the skeletal remains must be decided wholly upon geological considerations. The morphological characteristics do not necessitate any separation from the more recent Indians in physical type. On the other hand, this in itself does not militate against a considerable antiquity as estimated in years.

EXTRA–LOCAL RELATIONS.

The foregoing account of the argillite culture shows a localized deposit of remains culturally different from those of the Lenapé and lying in an older stratum. Since the artifacts are an integral part of the sand it follows that they were deposited with the sand. The features of the stratum seem to fit best, as far as our knowledge goes, with fluviatile deposits. As such, our finds may not represent the culture as a whole and the original associations of the culture may, therefore, be unknown. In any event, other similar sites must be found; either an undisturbed camp site or similar natural deposits. The following notes on a number of sites visited, as well as others which have been described elsewhere, give some suggestive points.

In 1913 I found anomalous camp sites at Plainfield, forty miles northeast of Trenton. These are in areas mapped with the Cape May formation, which also extends as a narrow valley train up the Millstone River and down Assanpink Creek to southern Trenton. There is a suggestion here that the Trenton area represents the delta of Assanpink Creek when that stream flowed the entire distance from Plainfield. Following this suggestion, I first examined the older Pensauken terrace south of the Abbott Farm (with negative results) and then searched northward along Assanpink Creek. A great part of this valley is semi-swamp, so that large sections of Cape May area could not be examined. I found nothing northeast of the city until I reached Franklin Corner, south of Lawrenceville, again at Port Mercer, and at a point one half mile further north.

At each site I found a small group of arrow points and chips scattered over an area of a dozen yards. So far as I can judge, these are mostly argillite, with the same characteristic disintegration of the surface as at Trenton.

The site at Franklin Corner, on the farm of Mr. William S. Duncan, lies at the edge of the Cape May deposit which is only three feet thick at this point. A fifty foot trench was dug. Artifacts and pebbles were infrequent. There were no red bands as at Trenton. The distribution of twenty-six specimens was as follows: —

Depth below surface (inches)	Frequency
4	4
5	6
6	1
7	0
8	5

Depth below surface (inches)	Frequency
9	0
10	0
11	1
12	0
13	3
14	4
15	2

The upper ten inches is within the plowed area. It is possible that the double grouping is due to this. These figures do not seem significant.

The second site is on the farm of Mr. William S. Schenck, near Port Mercer, in a field west of the Mercer-Somerset county line. The third lies a half mile north of Port Mercer, in a field east of the point where the Princeton trolley line crosses Stoney Brook. The deposits were also examined as far as Kingston. I have been told that similar disintegrated argillite specimens have been found along the Millstone River.

Further north all cleared lands from Somerville to the terminal moraine east of Plainfield were examined. Nothing was found about Somerville and Findern. Weathered argillite fragments (chips?) were found at South Bound Brook and a mile east of East Bound Brook.

In 1913 I found several sites near Plainfield where implements and chips of argillite or a similar material predominated.[1] There are many such objects in local collections. Trenches were dug in a site located just north of the entrance to the Lehigh Valley Railroad coal yards half a mile south of South Plainfield. The black soil, 5 to 7 inches deep, overlies a yellowish-red sand. The distribution of finds is as follows: —

Depth below Black Soil (inches)	Frequency
1	1
2	3
3	4
4	3
5	8
6	1
7	2
8	1
9	0
10	1
11	1
12	3
13	4
14	0

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[1] Spier, (b), 77–79.

Many fire-cracked stones were found at one point in a compact group from 11 to 14 inches below the black soil. These figures probably have no significance. Here too the argillite specimens found showed the same greenish, chalky surface seen on Trenton specimens.

Mr. Skinner has also called attention to a site south of Bridgeton on Cohansey Creek where argillite implements occur alone.[1]

Reports of argillite implements led Mr. Skinner to examine the valley of the Susquehanna River and its tributaries in the vicinity of Bloomsburg, Pennsylvania, and I examined that of the Chemung River near Elmira, New York. These implements, argillite, rhyolite, etc., do not show any of the characteristics of the Trenton finds. Stratified sites with suggestive similarity in the Trenton finds are Mercer's Lower Black's Eddy site and Hawkes and Linton's Masonville and Medford sites.

Mercer's site is located at Lower Black's Eddy on the bank of the Delaware near Point Pleasant, Pennsylvania.[2] Two culture horizons were found: a surface layer of historic Indian refuse, 2½ to 3½ feet deep, below this a barren region 1½ to 3 feet deep, resting on a layer of older remains 1 foot to 1 foot 10 inches deep. The upper layer yielded the following forms: polished celt, hammerstone, net-sinker, blades and arrow points of quartz, quartzite, chert, jasper, a red stone, and argillite (chert and jasper arrow points of triangular type), fire-cracked pebbles, bones, three types of native pottery, and European objects. In the lower level were the hammerstone, net-sinker, blades and arrow points of quartzite, chert, jasper, and argillite (arrow points chiefly of "fish-spear" type), and potsherds of coarse type. According to Mercer's identification of 1526 objects in the upper layer, argillite outnumbered other materials in the proportion 4 to 1, among 462 in the lower layer by 12 to 1. He also finds the difference in arrow point form significant. Since the whole site is known to lie within the sphere of freshet activity, no certain claim can be advanced for the antiquity of the lower layer.

The range of implement types, except for the two potsherds in the lower layer, suggests a resemblance to the Trenton finds. The occurrence of the "fish-spear" type and perhaps the proportion of argillite are specific similarities. Mercer says nothing whatever of the weathering of these objects. We do not know the exact mode of occurrence of these objects, whether this is a camp site or natural deposit, and the geological relations of the site are unknown. While the resemblances are strong, nevertheless it would be rash to assume that these necessarily refer to the Trenton argillite culture.

The Masonville and Medford sites are near Rancocas Creek, fifteen or twenty miles south of Trenton. Hawkes and Linton found Lenapé remains in the surface layer of black soil (six inches to one foot deep) overlying yellow sand (three to six feet deep) in which were older remains with a well-marked level of occupation at its junction with an underlying white sand. These remains consisted of chipped celts, hoes, hand hammers, small cylindrical stones, large blades, knives, ceremonial points, small projectile points, drills, banner stones, crude pottery, bones and fire-pits at the surface of the white sand. The material used was argillite or a stone of similar appearance, which had undergone considerable weathering. The yellow sand was deposited subsequent to most of these objects either by wind or water.[1]

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[1] Skinner, (a), 55.

[2] Mercer, (b), 70–85.

While the blades and arrow points have a suggestive similarity in form and patina to the Trenton specimens, nevertheless, the Masonville-Medford culture contains chipped celts, drills, banner stones, and pottery, none of which occur at Trenton. The cultural difference is rather great. The geological positions of the Masonville, Medford, and Trenton sites have never been fully determined. All three are mapped with the Cape May deposits, but this means very little as all deposits not distinctly glacial or palpably recent are classed with this formation. I believe that my earlier objections to considering the Masonville culture as closely related to the Trenton culture holds for the Medford finds as well.[2]

Dr. Abbott and others have told me of similar deep finds near Rancocas Creek which bore a distinct resemblance to the Trenton finds. Dr. Hawkes refers to such material in local collections and especially to a site near Indian Mills.

This survey of finds in the neighborhood of Trenton leaves one distinct impression; that the subject is not a simple one. First, the argillite culture is characterized by a paucity of traits: these traits are the most generalized and therefore most likely to turn up in other cultures. Second, the Lenapé themselves used many implements which are practically indistinguishable from the Trenton finds both in form and patina. Inasmuch as the argillite implements lie only a few inches below the surface it is not unlikely that they have been repeatedly washed out and used by the Lenapé or we may find them among Lenapé remains simply because the plow has inextricably mixed the two cultures. For instance, the presence of similar objects at Plainfield and Staten Island[3] may be explained by the historic fact that the Trenton group of Lenapé had villages at all three places. Third, a fair amount of enterprise has succeeded in bringing to light several stratified sites. We do not know what cultures the region may contain. Therefore, it seems rash to align any of these finds with those at Trenton at present.

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[1] Hawkes and Linton, (a) and (b).

[2] Spier, (d): cf. Linton.

[3] See Lewis, for objects from Staten Island.

RÉSUMÉ.

Of the three alleged superposed cultures at Trenton, that of the Delaware Indians, the "argillite culture," and the "paleolithic culture," the proofs for the intermediate horizon are subjected to a new analysis. This cultural deposit is found to extend in a narrow area along the river bluffs, being distributed through a sand stratum in a single plane of maximum distribution around which the finds occur according to a normal frequency distribution. These artifacts have a differential mode of occurrence; their center of gravity being above the modal plane. Pebbles of undoubted natural deposition occur with the artifacts, having the same dispersion and with distributional maxima coincident. Films of red clay which traverse the sand may be of secondary origin, not indicating separate strata but stages of the ground water level. The coincident occurrence of artifacts and pebbles indicate that a single depositing agent has acted on the entire sand deposit.

A comparison with deposits of known origin shows a general dissimilarity with artificial culture deposits but an identity with a water deposit. Such an origin for the Trenton "argillite culture" implies some antiquity.

The culture is simple, especially in contrast with that of the historic Delaware; the remains including only large stone blades and arrow-heads, the pitless hammerstone, the rubbing-stone, and fire-fractured pebbles. Most of the objects are considerably weathered. Remains of two human adolescents were also found.

Culture deposits in other localities with definite associations with the "argillite culture" have not been found. It remains an isolated find.

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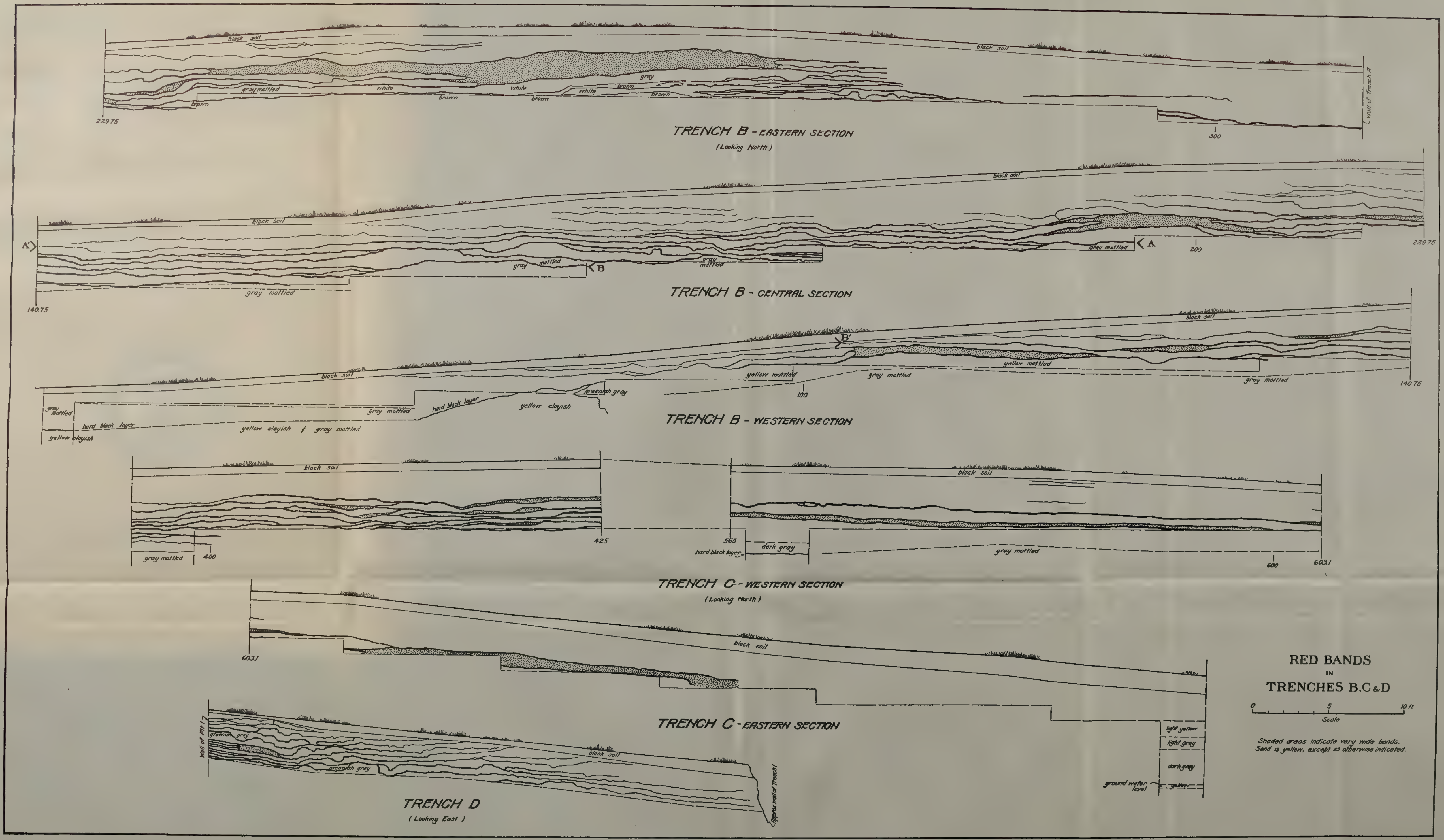

Fig. 11. Red Bands in Trenches B, C, and D.

ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

VOL. XXII, PART V

AN ANCIENT VILLAGE SITE OF THE SHINNECOCK INDIANS

BY

M. R. HARRINGTON

NEW YORK
PUBLISHED BY ORDER OF THE TRUSTEES
1924

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INTRODUCTION

The investigation described in this paper, carried on under the auspices of the American Museum of Natural History during the summer of 1902, was probably the first attempt to study in detail any of the aboriginal village sites on the eastern end of Long Island, New York, although considerable work of a more general nature had been done before by Tooker[1] and others. In fact, so far as the writer knows, it is the only study of the sort on record to date, the only other publication dealing with actual explorations in this district being a description of the excavation of a Montauk cemetery of the Colonial period[2] and not of a village site.

Assisting the writer were Mr. Arthur C. Parker, now State Archæologist of New York, and Mr. Alanson Skinner, now Curator of Anthropology at the Milwaukee Public Museum. It is interesting to note that this was Mr. Skinner's first expedition and Mr. Parker's second.

The expenses of the first part of the expedition were borne by Mrs. Esther Hermann; but after this fund had become exhausted, Mr. William Weiss of Southampton, New York, assisted us to carry on the work another month; and to both of these patrons the thanks of the Museum are due.

A brief résumé of our results was published in the *Southern Workman* for June, 1903. The work received passing newspaper notice at the time, and in due course a detailed report was made to the Museum. It was not, however, until more than nineteen years had elapsed since our party folded its tents and closed its notebooks for the last time on Shinnecock Hills that the opportunity arrived for the writer to revise his report for publication.

The results of his efforts will be found in the following pages, in which the writer will describe the site, the method of excavation, and the phenomena encountered during the course of the digging. An endeavor will then be made to reconstruct, as nearly as can be done with the scant data which still remain, the material side of the life of the Indians who inhabited this village, and to give a glimpse of their arts and crafts, their dwellings, and the means by which they gained their livelihood.

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[1] Tooker, William Wallace. "Some Indian Fishing Stations upon Long Island" (*The Algonquian Series*, New York, 1901).

[2] Saville, Foster H., "A Montauk Cemetery at Easthampton, Long Island" (*Indian Notes and Monographs, Museum of the American Indian, Heye Foundation*, Vol. II, No. 3, New York, 1920).

Fortunately, we are not obliged to depend solely upon the specimens found buried in the earth for our information, although these furnish the bulk of it; for we discovered a few articles of native style still in the hands of the mixed-blood descendants of the Shinnecock Indians who inhabited a nearby settlement at the time of our visit. From these and some of the older whites in the neighborhood was secured considerable information of interest. A knowledge of other tribes of similar culture was found helpful in the interpretation of some of our finds, as were the old records of the town of Southampton, and the accounts of early travelers who met the Long Island and neighboring Indians in their pristine state. These last will be employed by reference only, as Skinner has made full use of them in his accounts,[1] of the Indians about New York City, published by this Museum. Our justification for using the modern Shinnecock artifacts in connection with those exhumed from the ancient village, implying that these also are of Shinnecock origin, will appear later.

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[1] Skinner, Alanson, "The Lenapé Indians of Staten Island" (this series, vol. 3, New York, 1909); "The Indians of Manhattan Island and Vicinity" (*Guide Leaflet Series No. 41*, *American Museum of Natural History*, New York, 1915).

THE SITE AND ITS SURROUNDINGS

Far out, toward the extreme end of Long Island, some eighty miles eastward from New York City, lie the Shinnecock Hills, a rolling sandy tract, almost treeless, but covered with bay and thorn bushes and dotted with little swamps where taller underbrush and even small trees may be seen, rising from a tangle of wild grape vines and wild roses, the blossoms of the former, even more than the latter, filling the air with perfume in late spring and early summer.

The Hills occupy the narrow neck of land between Peconic and Shinnecock bays, the former an arm of Long Island Sound, the latter separated from the Atlantic only by a narrow barrier beach of sand. To the east, the country becomes more level and fertile, and on the Peconic side was still heavily wooded at the time of our visit. On the Atlantic side lies the town of Southampton, even then a popular resort in summer. To the west of Shinnecock Hills the isthmus becomes even narrower, until at Canoe Place but a comparatively few yards of sand divided the waters of Peconic Bay from those of the bay to the south, and consequently, of the Atlantic. Here the Indians had a portage,[1] over which they could drag their canoes a short distance overland from the Atlantic into Long Island Sound by way of Peconic Bay, without being obliged to brave the rough waters in rounding Montauk Point, the extreme eastern tip of the Island, and thereby saving some seventy or eighty miles of distance out and back. The whites also were not slow in appreciating the strategic advantage of the spot with the result that the State has constructed a canal on the site of the old Indian portage for the benefit of local fishermen.

This short cut must have played a considerable part in making the region attractive to the Indian, supplementing its natural advantages of good springs of water, proximity to the ocean and to nearly land-locked bays furnishing the best of fishing and numerous clams and oysters, a nearby forest which must have abounded in game, and convenient fertile tracts suitable for cultivation. In fact, numerous traces of ancient habitation may be seen on every hand, especially on the northern side, where the hills are lower, along the shores and coves of Peconic Bay.

The Site. The largest of these sites, the scene of our investigations, lies along the west bank of Sebonac Creek, which, rising in a series of springs in a little swamp about three-quarters of a mile north of the Shinnecock Hills Golf Club, flows northward for some distance as a fresh water brook. Before long, however, it becomes a tidal creek which in turn broadens out into Bull Head Bay, an arm of Peconic Bay. Scattered along the entire distance from the springs to the bay might be seen patches of decaying oyster and clam shells of varying area and depth, sometimes but a few yards in diameter, sometimes quite extensive. For the most part, these showed on the surface in the form of small fragments of shell only visible to the practised eye among the thin grass and straggling bushes.

---

[1] Tooker, *op. cit.*, 41.

To the casual observer such deposits of shells appear to have been laid down on the sea bottom at some time when the present dry land was submerged; in fact, the writer has often been asked if such could not be the case. Upon his reply that the shells were left by the Indians, the questioner almost invariably inquires, "What was their object?" and is usually greatly astonished to learn how simple is the answer: that the aborigines, after gathering the oysters and clams, and bringing them to their village, merely ate them and threw the shells away, and that these shells, accumulating through the years, formed the deposits that have endured until this day.

Ten of these "shell-heaps" were counted on this site, large enough to warrant the conclusion that each represented not one, but a group of ancient habitations, besides smaller ones which probably marked the site of solitary wigwams. They were lettered consecutively on our map as, A, B, C, etc., beginning at the springs and proceeding northward. This map (Fig. 1) shows only five of the shell deposits, however,—those wholly or partially explored—the others lie to the northward, outside of the area represented.

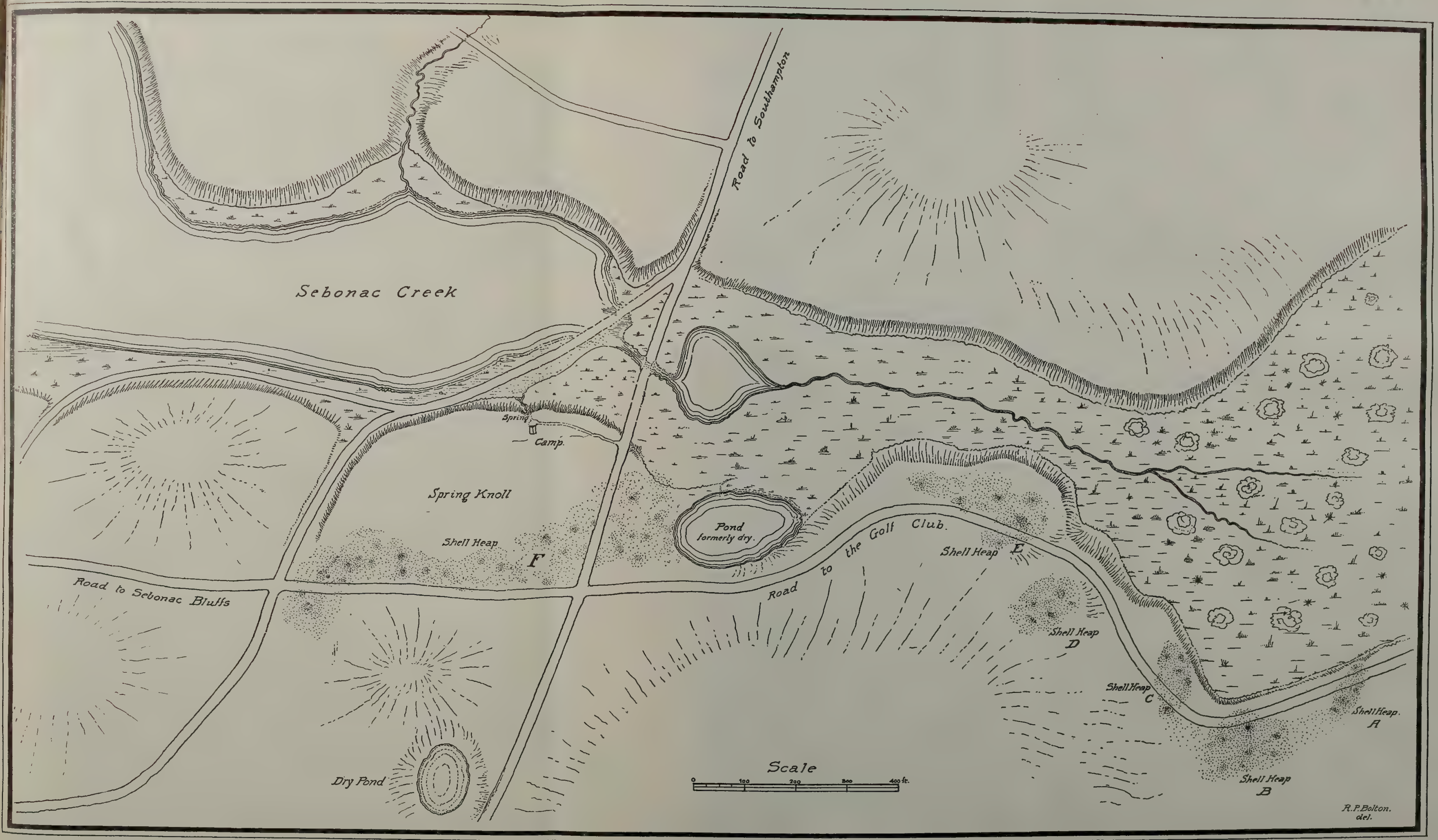

Fig. 1. Map of the Sebonac Site.

The Excavations

Method of Investigation. Our first procedure in examining one of these deposits was to dig in various parts of it small excavations called test holes, each some eighteen or twenty inches in diameter, penetrating through the shells and other materials composing the "village layer" down to the original undisturbed soil of the site. By "village layer" is meant the accumulated refuse of the Indian village, not only the shells, but the soil blackened by the decay of organic matter, stones shattered and cracked by the heat of ancient campfires, charcoal, ashes, the bones of food animals split for marrow, fragments of broken earthen pots, chips of flint and other refuse from the making of stone implements, and occasional perfect objects of Indian make, lost by accident or hidden for safe-keeping.

By these test holes then, we determined the depth and richness of a deposit, and could then decide what part or parts, if any, warranted more thorough excavation. Should such a place be found the next step was to locate the edge of the deposit and there start a trench running down through the village layer, three or four inches into the undisturbed sand below, and wide enough to allow six feet to each worker. A trench of this kind was carried forward by carefully digging down the front with a trowel, searching the soil for relics, then, with a shovel, throwing the loose earth thus accumulated back out of the way into the part already dug over, so as to expose a new front. Test holes two or three feet deep were sunk into the sand here and there and the digging-down process repeated until the opposite side of the deposit was reached and the indications disappeared. Then another trench was run parallel and adjacent to the first on its richest side, and so on, until the investigator was satisfied that he had covered the entire deposit, or at least as much as his purpose required.

Pits. The object of digging the trenches not merely to the bottom of the village layer, but several inches below it, and of driving test holes, was to detect disturbances running down into the subsoil from the bottom of the deposit. Such disturbances may be very difficult to follow, showing merely slight stains and bits of charcoal running down into the ground; but they indicate that the subsoil at that point had at some distant date been dug out and filled in again. It is incumbent on the archæologist to find out why, if he can, and to this end he must dig them out to the very bottom.

This frequently leads him to a skeleton, but still more frequently the disturbance turns out to be merely a pit, a bowl-shaped or cup-shaped hole, dug for one of several purposes, and later used as a repository for ashes and camp refuse that were thus disposed of neatly and easily. One of the purposes for which they were dug was for the storage of corn over the winter. Probably many of the larger pits were thus first employed, but the majority seem to have been ovens or steaming holes, the Indian prototype of the fireless cooker, and direct progenitor of the modern clambake. As nearly as can be discovered, these holes were lined with stones and a fire built in them which was kept up until hole and stones were piping hot. Then the oysters, clams, meat, or whatever food had to be cooked, were put inside and carefully covered so as to retain the heat, and left until done. Some seem to have been used as cookers, without the addition of stones; others, to have been dug purely and simply for the disposal of odoriferous garbage. The examples described on the following pages illustrate typical forms and sizes.

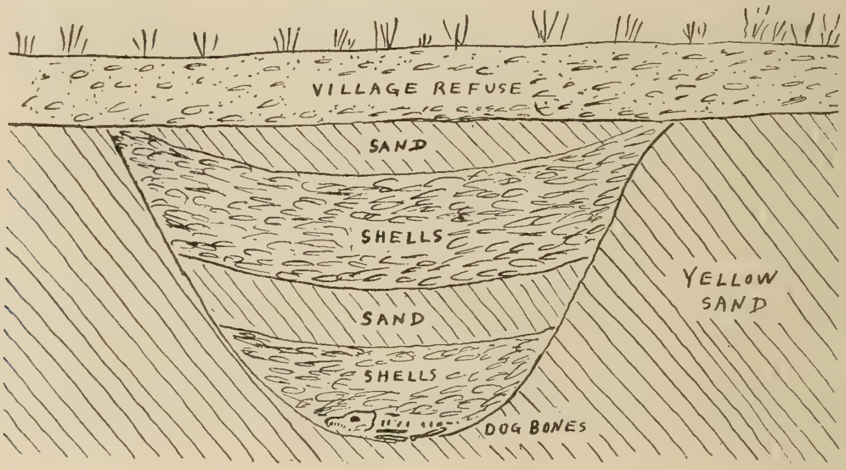

Fig. 2. Section of Pit 62 in Shell-heap A.

Shell-heap A. The first shell-heap examined, designated on our map (Fig. 1) by the letter A, was situated near the little swamp whose springs constitute the source of Sebonac Creek. Numerous test holes dug in different parts revealed the fact that the village layer was shallow, averaging about a foot in depth, and that its groundplan was oval, with a length of 110 feet and a width of about 30 feet. Our tests, although failing to yield prospects good enough to warrant trenching, disclosed one rather unusual pit, about 4 feet wide and 3 feet deep, filled with alternate layers of shells and sand as shown in the section (Fig. 2) and containing disjointed dog bones at the very bottom. Scattered through the other layers were several arrow points and unfinished implements of quartz, two broken bone awls, a piece of deer antler, and numerous animal bones, for the most part split for the marrow, as usual.

Shell-heap B. Shell-heap B was much larger, some 200 feet long by 100 feet wide, although no deeper than Shell-heap A. It proved to be so much richer that we dug no less than twelve trenches, uncovering twenty-eight pits. Among the most interesting of these was Pit 10, which was found to be 53 inches long, 47 inches wide, and 47 inches deep, and contained, besides the usual shells, deer and fish bones, broken pottery, and bone awls, two burned layers, one directly upon the bottom, one six inches above, yielding charred hickory nuts, acorns, bits of rushes and wood, and most interesting of all, charred cord and bits of aboriginal fabric, made of some coarse vegetal fiber (Fig. 3). Another notable pit was No. 28 which was 6 feet in diameter and 4½ feet deep, with a layer of burned shells and ashes in the center. This pit yielded a number of bone awls and worked pieces of antler, an antler arrow point, many fragments of pottery and an unusual number of bones of various animals, birds, and fish, together with a small deposit of still recognizable fish scales in the very bottom. Pit 40 contained, among other objects, thirteen scrapers of quartz and Pit 47, a large mortar stone with two grinding cavities, one on each side.

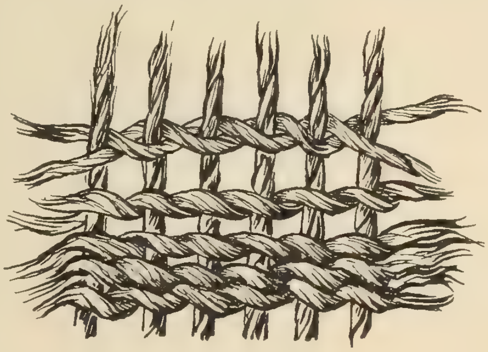

Fig. 3 (20-7472). Piece of Aboriginal Textile.

An unexpected find appeared in Pit 43, which, although but 3 feet wide and 22 inches deep, contained, at 16 inches, the dismembered skeleton of a person some twenty years of age, among whose bones, some of them slightly charred, lay a few bones of an infant. Many potsherds appeared in this pit, some of them lying directly upon the skull. Beneath the bones were found more broken pottery and a number of the bony plates or scales of a large sturgeon. The charring of toes, ankles, pelvis, and ribs suggest that the poor unfortunate may have met death at the stake.

Most instructive of all, however, was Pit 48 which, in spite of its small size (3 feet in diameter and 28 inches deep), yielded an excellent series of specimens illustrating the making of pottery. A lump of unworked clay and some tempered clay lay in the bottom of the pit, while immediately above, fragments of the major portion of a large jar were found. Among the refuse of the pit, which was largely filled with shells of the soft clam, were found two stone pottery smoothers with the clay still adhering (Fig. 4*a*), a bone awl that could have been used to draw the incised designs on a vessel while still soft, a stone muller, probably intended to crush the clay or the tempering materials, probably both, and preserved by accidental burning a small vessel in the course of manufacture showing the coiling process distinctly (Fig. 6).

Among the many arrow-heads, potsherds, and other specimens turned out in the general digging here, one object holds a peculiar interest. It is the perforated circular ornament of claystone shown in Fig. 8, engraved on one side with a figure which suggests the head of a bird (*a*), on the other, with a design which seems to represent an eye, of which the central perforation forms the pupil (*b*).

Shell-heap C. Situated some 100 feet northeast of Shell-heap B lies Shell-heap C, very similar in form to A, but a little larger and a little deeper, averaging 14 inches, as two trenches and a number of test holes showed. A few pits were found here, one of which, a small one, contained a flat pebble, bearing scratched upon it a rude sketch of the face of some animal resembling a lynx (Fig. 7). Much of the ordinary material was found in the general digging, scattered through the whole deposit.

Shell-heap D. On a rise of ground some distance north of the preceding was situated Shell-heap D, which, like it, was of rather small dimensions. It was shallower, measuring only 8 inches, and contained but two pits worthy of the name, one of the common form and contents, the other, Pit 64, more cup-shaped than bowl-shaped, with sides nearly perpendicular. This contained, besides the common bones and sherds, a lynx jaw, a raccoon jaw, and a piece of antler showing cutting.

Shell-heap E. Just east of D, lay Shell-heap E, large and irregular in outline and variable as to depth. This shell-heap was chiefly remarkable because it contained two wigwam sites distinguishable as such, the first the writer had seen in all his three years' archæological digging about New York.

Wigwam Sites. The first wigwam site was an oval of stained earth about 15 feet wide by 20 feet long, and in the center, where the fireplace seems to have been, reaching a depth of 3 feet. The average depth of the floor, however, was some 27 inches. Here were unearthed two massive pieces of a whale's lower jaw bone, still showing at the ends the marks of the stone ax with which it had been cut into lengths (Fig. 5), for what purpose was not evident. Scattered about through the deposit were many pieces of a small pottery vessel, bone awls, and pieces of deer antler showing cutting, besides the ordinary animal bones, flint chips, and the like. Shells and charcoal, while present, were by no means abundant.

Of considerably smaller size was the second wigwam site, which lay about ten feet southeast from the first, for it measured only 10 feet by

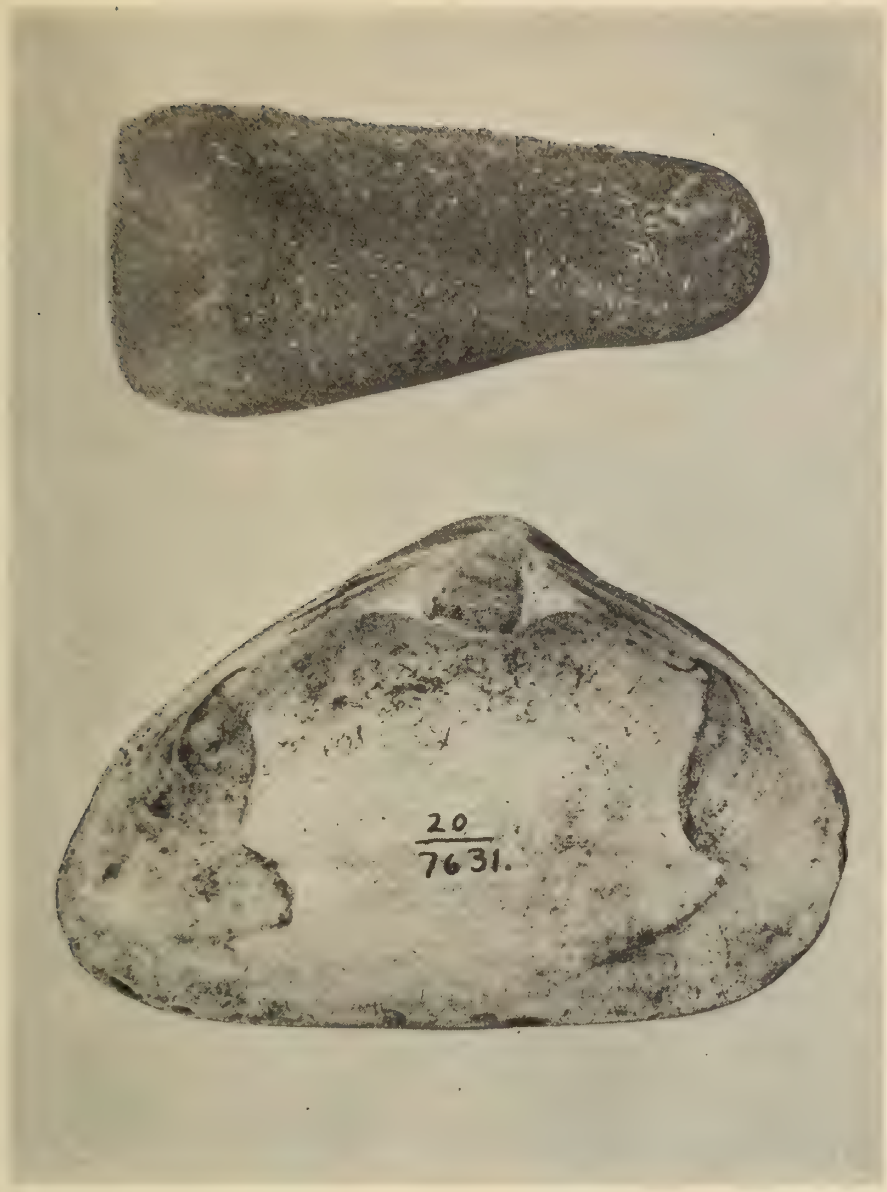

Fig. 4 *ab* (20-7762, 7631). Implements for making Pottery.

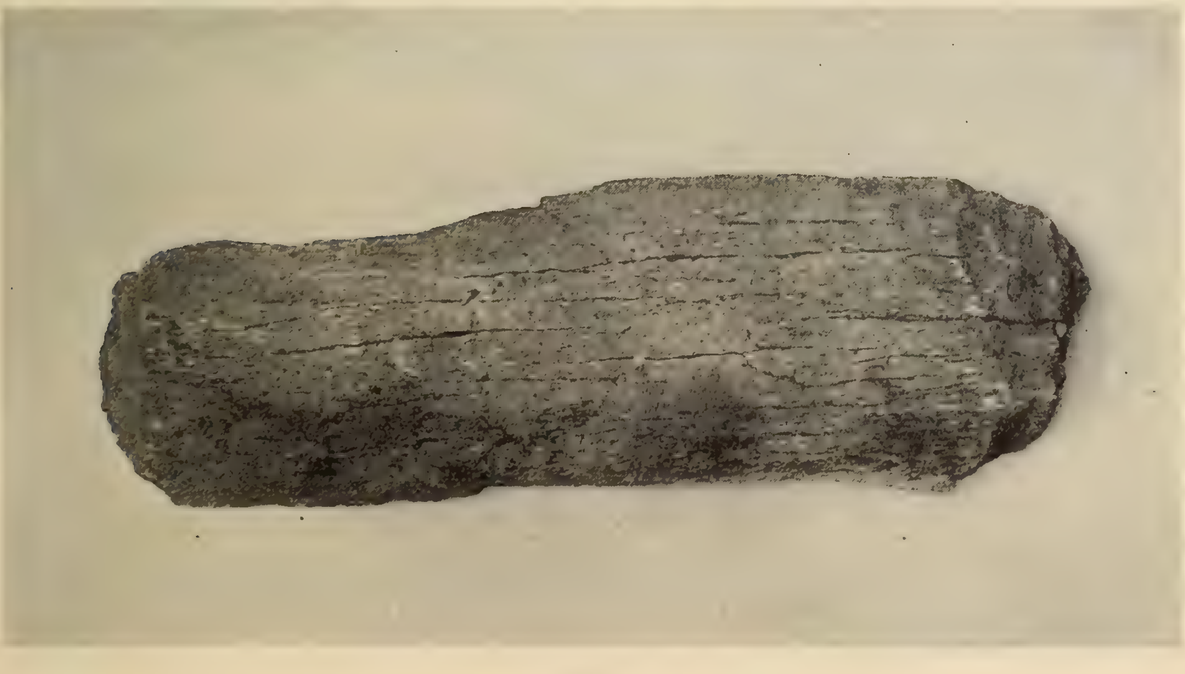

Fig. 5 (20-7918). Piece of Whale's Jawbone showing Marks of the Stone Ax.

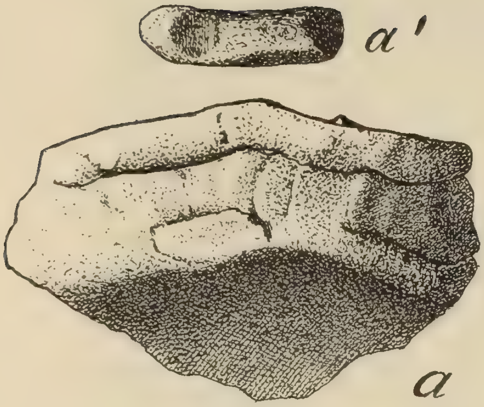

Fig. 6.

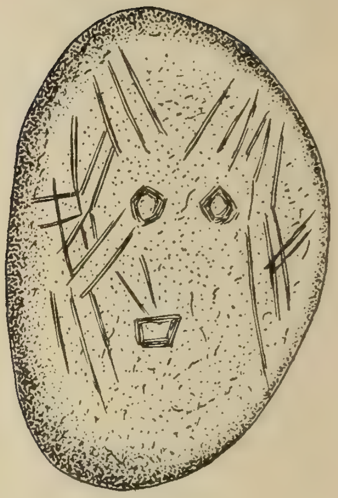

Fig. 7.

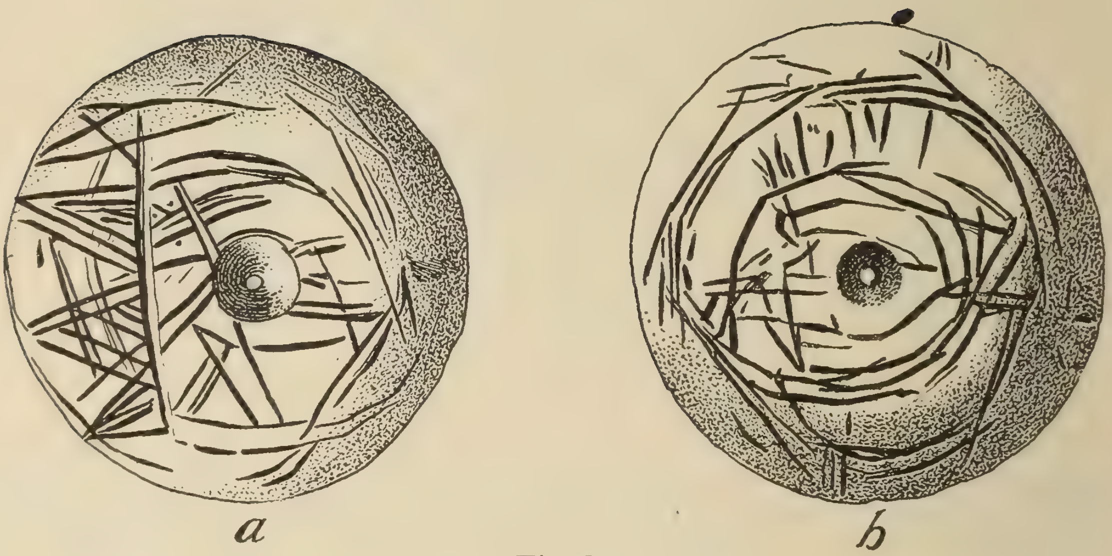

Fig. 8.

Fig. 6 *a*′, *a* (20-7846, 7774). Part of Pottery Vessel showing Coiling and a Piece of a Clay Coil.

Fig. 7 (20-7627). Pebble showing Drawing of an Animal's Face.

Fig. 8 *ab* (20-7660). Obverse and Reverse of a Clay Stone Pendant showing Designs possibly representing a Bird Head and an Eye, respectively.

15 feet. In the center, where the fireplace had been, was a distinct spot of burned earth, and a deposit of ashes, a little over 2 feet below the present surface. This wigwam site, like the first, was thoroughly excavated, but yielded only the commonest of pottery fragments and split animal bones.

Burial. But a few feet east of the first wigwam site, in Pit 54, a typical burial came to light, the first and only one entirely in anatomical order found on the site. It was the skeleton of an aged person lying flexed on its right side with the head to the southwest, face turned toward the east, and hands near the face (Fig. 9). The only unusual feature was the sunken position of the hips, fully two feet deep, while the head was 14 inches and the feet but 12 inches from the surface. Near the pelvis were two worked stones and a large part of a bowl made from the shell of a box tortoise (Fig. 10). Above and a little south of the knees was a small bed of ashes. Throughout the grave were scattered disintegrating oyster shells, while the skeleton itself was badly decayed.

Copper Bead. This grave had cut into a pit (No. 55) which contained merely the ordinary animal bones and bits of broken pottery, in which respect it resembled several other pits that were opened in the vicinity. A rare article, however, appeared in the northern part of this shell-heap in the general digging, a cylindrical copper bead (Fig. 11), apparently made of the native metal; but without analysis this cannot be stated as a positive fact.

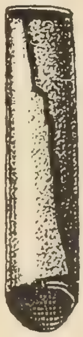

Fig. 11 (20-8026). Copper or Brass Bead.

Shell-heap F. North of Shell-heap E was a small fresh-water pond which became nearly dry in summer. North of the pond Shell-heap F extended down to the swampy ground surrounding the pond and the adjacent salt meadows. The swamp itself was full of shells in a number of places. This was the largest deposit of all, for it extended almost continuously from the little pond in a northerly direction around the western side of what we called the Spring Knoll a distance of five or six hundred feet, and was in places more than a hundred feet wide. The little work we were able to accomplish here in the brief time that remained to us was productive of excellent results, however, for the second pit (No. 59) yielded a nearly perfect pottery vessel of the pointed-bottom variety (Fig. 12), a long bone awl, and a beaver tooth, besides the usual material. This pit was oval in groundplan, measuring 4½ feet by 6 feet, with a depth of 28 inches. The construction, as may be seen in the section (Fig. 13), was rather out of the ordinary, in that the pit had been filled with raw unstained material such as forms the subsoil in the vicinity, thus producing a yellow layer above the shells and blackened earth of the pit. Such pits illustrate the wisdom of digging occasional test holes into the apparently undisturbed subsoil.

This was in the first trench; further trenching brought to light many small pit-like depressions, as well as ash-covered beds of fire-broken stones, all in or below a village layer which averaged about 10 inches deep. This yielded some very good bone awls, many potsherds and the ordinary material. At one place two points of deer antler and a bone awl were found in contact, lying on the original subsoil upon which the shell-heap rests.

Other Deposits. The shell-heaps to the northward toward Peconic Bay, and there were quite a number, were not touched for lack of time.

The Spring Knoll. Between Shell-heap F and Sebonac Creek, at this point expanding into a good-sized salt water cove, is situated the Spring Knoll, one of the most interesting parts of the whole village site. Toward the water, it terminates in a steep cutbank about 10 feet high, extending down to the edge of the creek, where a clear cold spring bubbles forth, while on the land side, beyond the shell-heap, the knoll blends with the brambly, wind-swept Shinnecock Hills. On this knoll, not far from the spring, the explorer's camp was pitched.

Graves. Just south of the crest of the knoll, test holes in one spot revealed dark stains penetrating the yellow sand, with here and there a scattered shell—a likely looking prospect for a grave. We followed these stains, of course, with the result that we soon traced the outline of a pit (No. 11) some five feet in diameter, and shortly afterward, at a depth of 28 inches, encountered the decayed bones of four infants matted together in a compact mass. The pit ran down to a depth of 38 inches and yielded, besides these remains and a few scattered bones of an adult, several fragments of pipes, both earthen and steatite, one of the latter engraved, and the usual sherds, including some fragments of steatite vessels, together with split deer bones and the like.

Pit No. 14, another grave, was found about 10 feet southwest of Pit No. 11. It contained the remains of a child aged about twelve, at a depth of 29 inches to the top of the skull. The skeleton headed east, and lay partly on the stomach with knees northward and feet doubled back to the pelvis. The skull had been displaced and was found facing west near the knees. It was badly cracked and the lower jaw and some of the cervical vertebræ were apparently missing, but were afterwards located

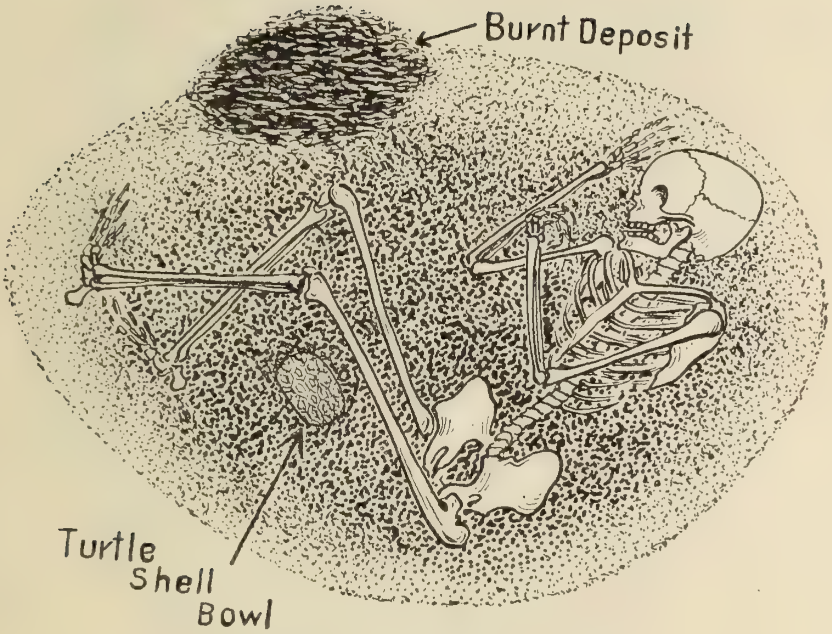

Fig. 9. Sketch of Skeleton in Pit 54.

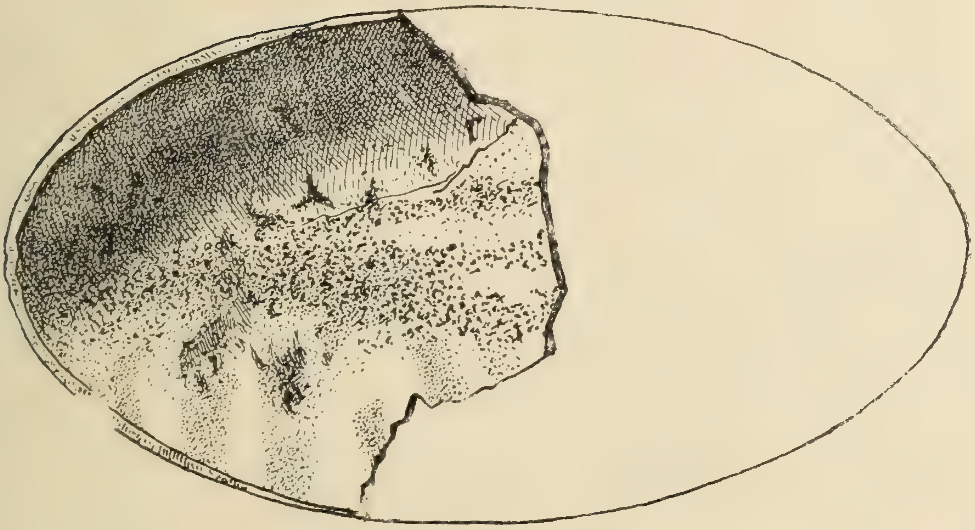

Fig. 10 (20-7937). Part of Tortoise Shell Bowl.

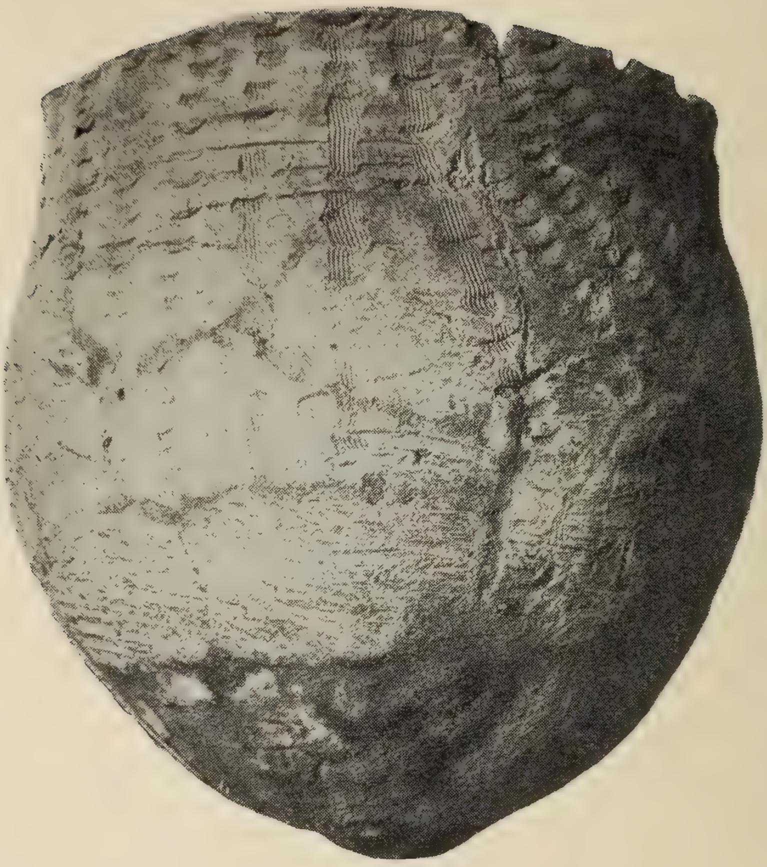

Fig. 12 (20-7975) Pottery Vessel

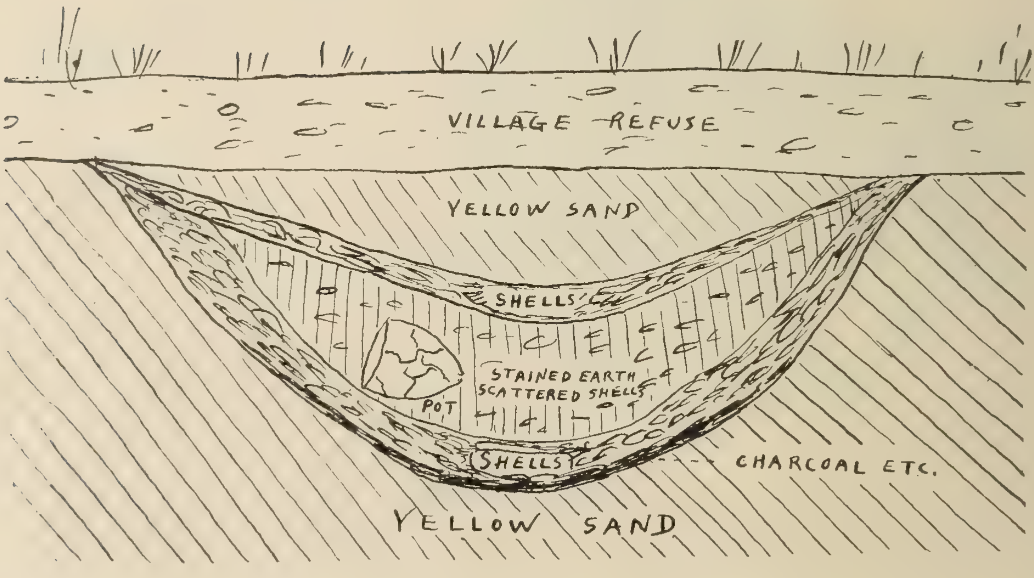

Fig. 13. Section of Pit 59.

near the pelvis. All the other bones were placed naturally. The pit ran down to the depth of 25 inches and contained broken pottery, fish bones, and the like, also a quartz arrow-head.

Other Pits. Six feet south of Pit No. 14 was Pit No. 35, of unusually large size, being 7 feet wide and 4½ feet deep, a pit which yielded among other material charred corn and cobs. Four feet south was still another pit (No. 36) about the same size as the last. It was nearer the swamp and reached water. In the bottom, embedded in the saturated sand and ashes lay many potsherds and a broken skull and femur. Both articulating surfaces of the femur and the face of the skull were missing. There were a number of other pits on the knoll, but these were not specially interesting.

Spring Knoll Village Layer. North of the summit of the knoll and facing Sebonac Creek is situated a small hollow in which were found many traces of occupation, but few shells. Here a number of trenches brought to light many specimens, among them a perforated clay-stone ornament and a potsherd bearing the engraved figure of a bird, perhaps the mythic "thunderbird" (Fig. 32e). Several pits were exposed here, one of which was Pit No. 1, interesting because it contained near the bottom a large number of land snail shells (*Helix albolabris* and *alternata*) showing the probable use of such snails as food. A section of this pit is shown in Fig. 14.

Archaic Specimens. The soil of the hollow is different from that of the other deposits on this site, as the black village layer reaches the depth of twenty inches in places, with but few and scattered shells. Most of the artifacts were found near the bottom, just above the yellow sand which underlies the whole deposit, but in some cases stemmed arrow points and crude crumbling pottery of a somewhat more archaic character than most of the specimens found here were exhumed from the yellow sand itself. It should be noted, in this connection, that the triangular type of arrow point was the most abundant on this village site; not, however, the narrow triangles associated with Iroquois culture, but the broad form affected by the seaboard Algonkian tribes.

Such were the conditions found and such the nature of our excavations. We must now attempt to learn from the specimens exhumed from this ancient village something of the life of its vanished inhabitants, of their means of livelihood, their industries and manufactures, and their relations with other peoples. Only in so far as we may be able to accomplish this will the results of our investigations be of real value. Fortunately, as before mentioned, we have specimens and information gathered from the descendants of this people, old local records, the writings of early travelers, and the surviving practices of similar tribes to help us.

Site identified as Shinnecock. With the exception of the few objects characterized above as archaic, found on and near the top of the sandy subsoil underlying the village layer on the Spring Knoll, all the material found was quite uniform and apparently the work of one people. Some articles made by the whites of the Colonial period (Fig. 15) were found near the surface, indicating that whatever the age of its first settlement the village had been occupied up to the coming of the whites. Now the white settlers found the Shinnecock in full possession of the district;[1] so if the last Indians of the village were Shinnecock, and the deposits for the most part contain the handiwork of only one people, we have good reason for assuming that the village was Shinnecock from first to last. As for the archaic articles, somewhat different in character, found in one spot on the Spring Knoll, these appear to be relics of an earlier camp occupied by a people who may or may not have been the ancestors of the Shinnecock.

Dwellings. What sort of houses stood on the knolls beside Sebonac Creek three hundred years ago? Our excavations told us little, except that they were of oval groundplan, some as small as ten by fifteen feet, some as large as fifteen by twenty feet; that their floors, sometimes at least, were sunk two or three feet below the surrounding surface of the ground; and finally, that the fireplace was in the middle of the floor.

There seemed to be little hope of finding further data. So when we discovered several living people who had seen Shinnecock wigwams in actual use our surprise and pleasure were great. Some of the informants were aged descendants of the Shinnecock; others were elderly whites who had spent their days in the neighborhood; but all agreed on a description which may be stated as follows:—

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[1] Thompson, Benjamin Franklin, *History of Long Island from its Discovery and Settlement to the Present Time* (Third edition, revised and greatly enlarged, New York, 1918), vol. 1, 127.

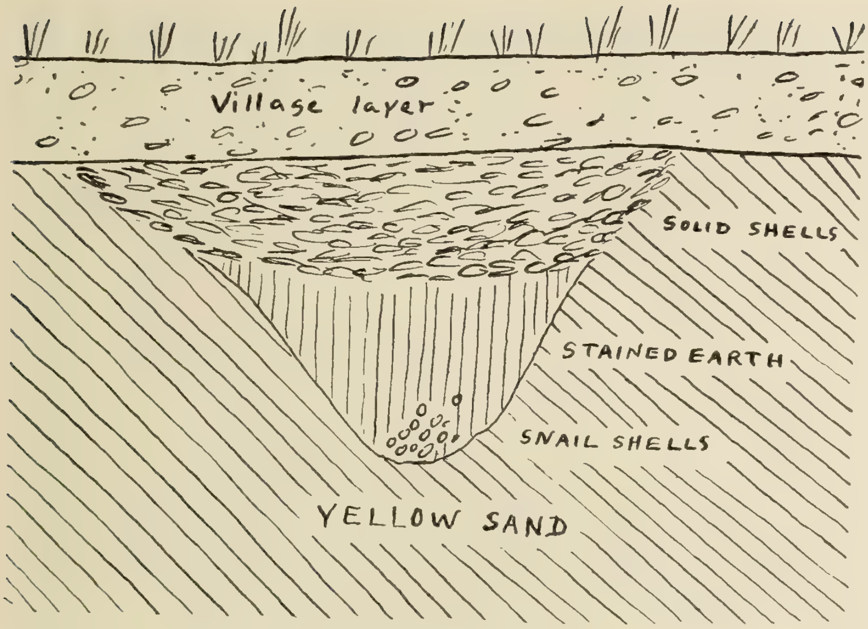

Fig. 14. Section of Pit 1.

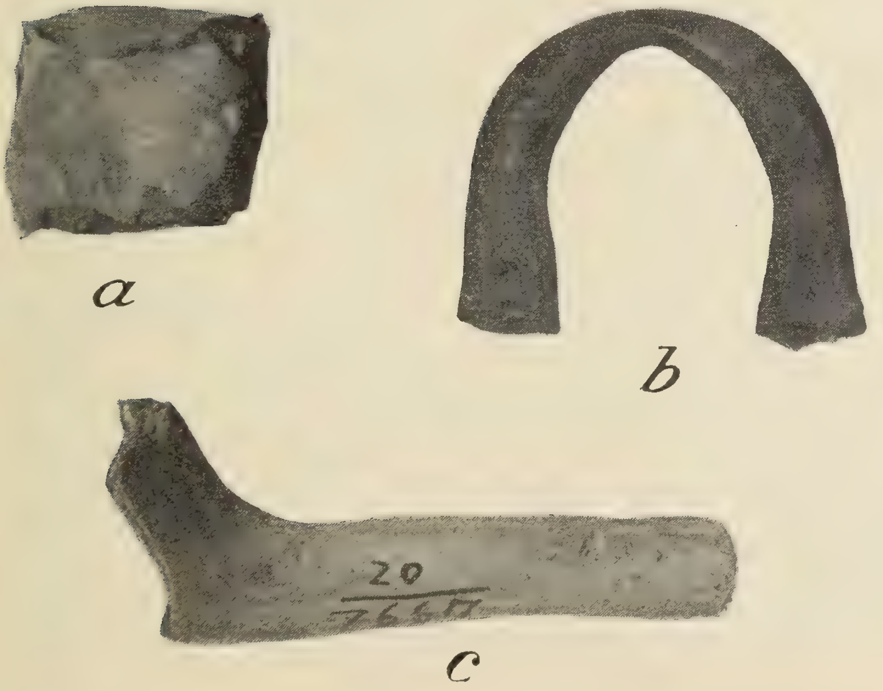

Fig. 15 *abc* (20–7319, 7292, 7667). Objects of European Origin.

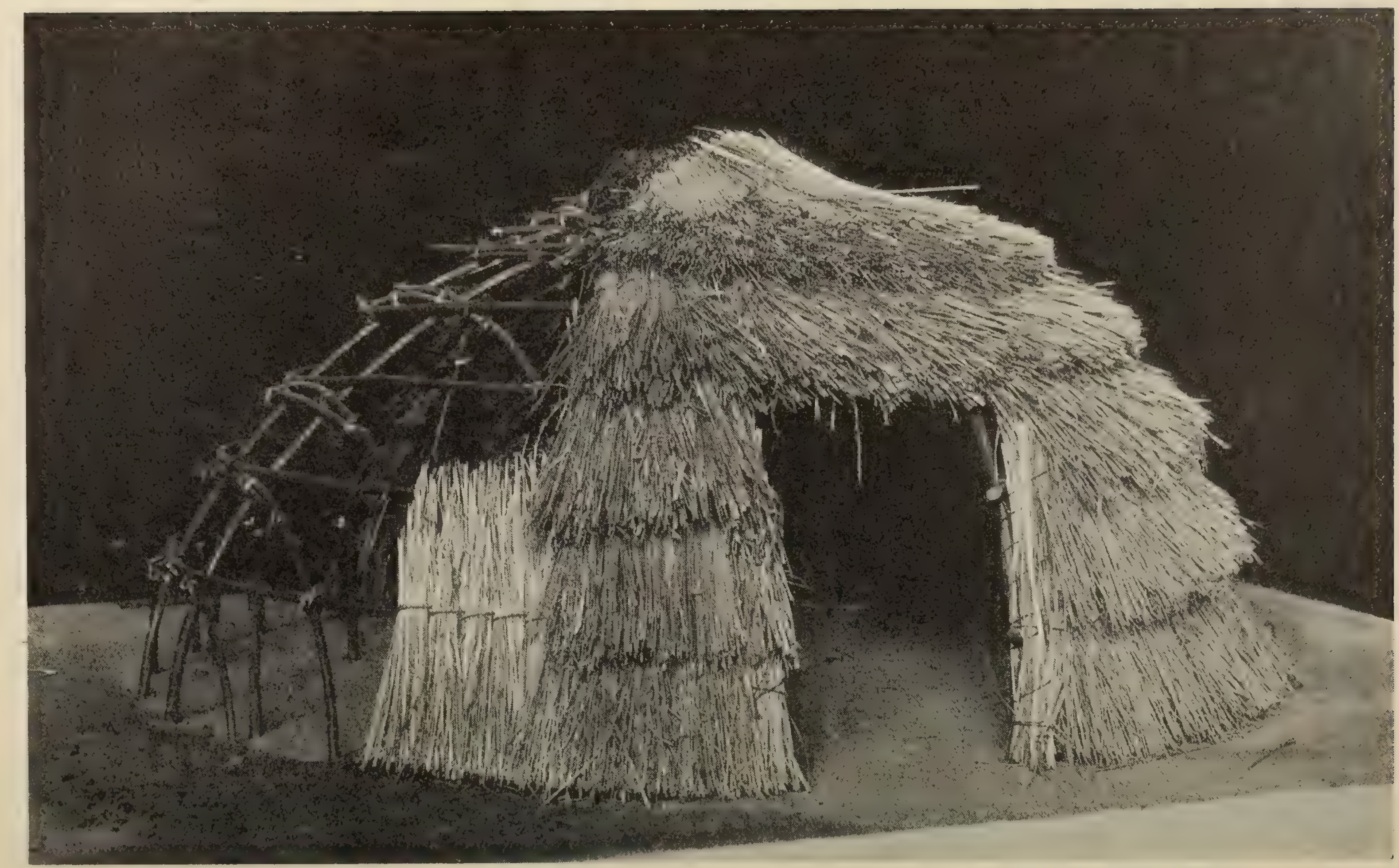

Fig. 16 (M–34). Model of Shinnecock Wigwam.

Poles were bent into intersecting arches until a dome-shaped frame was made from ten to twenty feet in diameter. After all the poles had been tied firmly together, and horizontal strips put in place, the whole was thatched with a species of grass, called "blue vent," put on in overlapping rows, and sewed fast to the strips. When the top was reached, a hole was left open for the escape of smoke, and the edges of the aperture plastered with clay to prevent the thatch from catching fire. The ground-plan was circular or oval, sometimes divided into rooms by partitions of wattle-work and thatch. The door frame was an arched pole, the door of wood, or sometimes merely a curtain of skin or mats. An elevated bench or couch of poles generally encircled the interior, beneath which the goods were stored. In at least one case, at a place where poles were difficult to procure, the floor was dug out in the middle so as to leave a shelf around the wall which answered the purpose of bed, seat, and table. The fireplace was in the center.

To preserve this information in tangible form, Mr. W. C. Orchard visited the Shinnecock settlement a few months after our party had left, and under the instruction of Wickam Cuffee (Fig. 35), one of the oldest and purest-blooded of the survivors, prepared a model showing the exact method of construction, which may be seen in Fig. 16. We afterward found a photograph of a full-sized Shinnecock wigwam in the records of the town of Southampton.

Outdoor storehouses were still made in the Shinnecock settlement, at the time of our visit, by digging holes four or five feet deep and roofing them with poles and thatch. One of these may be seen behind the Indian in the photograph reproduced in Fig. 38. That this is an ancient method may be established from Colonial records,[1] which mention the "Indian barns" as constituting a danger to the Colonist's cattle, on account of the excavations into which they might fall.

It is, of course, quite possible that the "holes" that gave the good people of Southampton such trouble in 1641 were merely abandoned storage pits that had never been roofed.

Means of Livelihood. A glance at the thousands of rotting shells which compose the bulk of the deposits gives an immediate clue to the outstanding fact of ancient Shinnecock economics: that the sea furnished the greater part of their living. We must not rest content with the idea that oysters, hard clams, soft clams, and scallops constituted the whole of the ocean's contribution, for the refuse layers and pits yielded crum-

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[1] Pelletreau, William S., "The First Book of Records of the Town of Southampton with Other Ancient Documents of Historic Value" (*Transcribed with Notes and Introduction*, Sag Harbor, New York, 1874), 22.

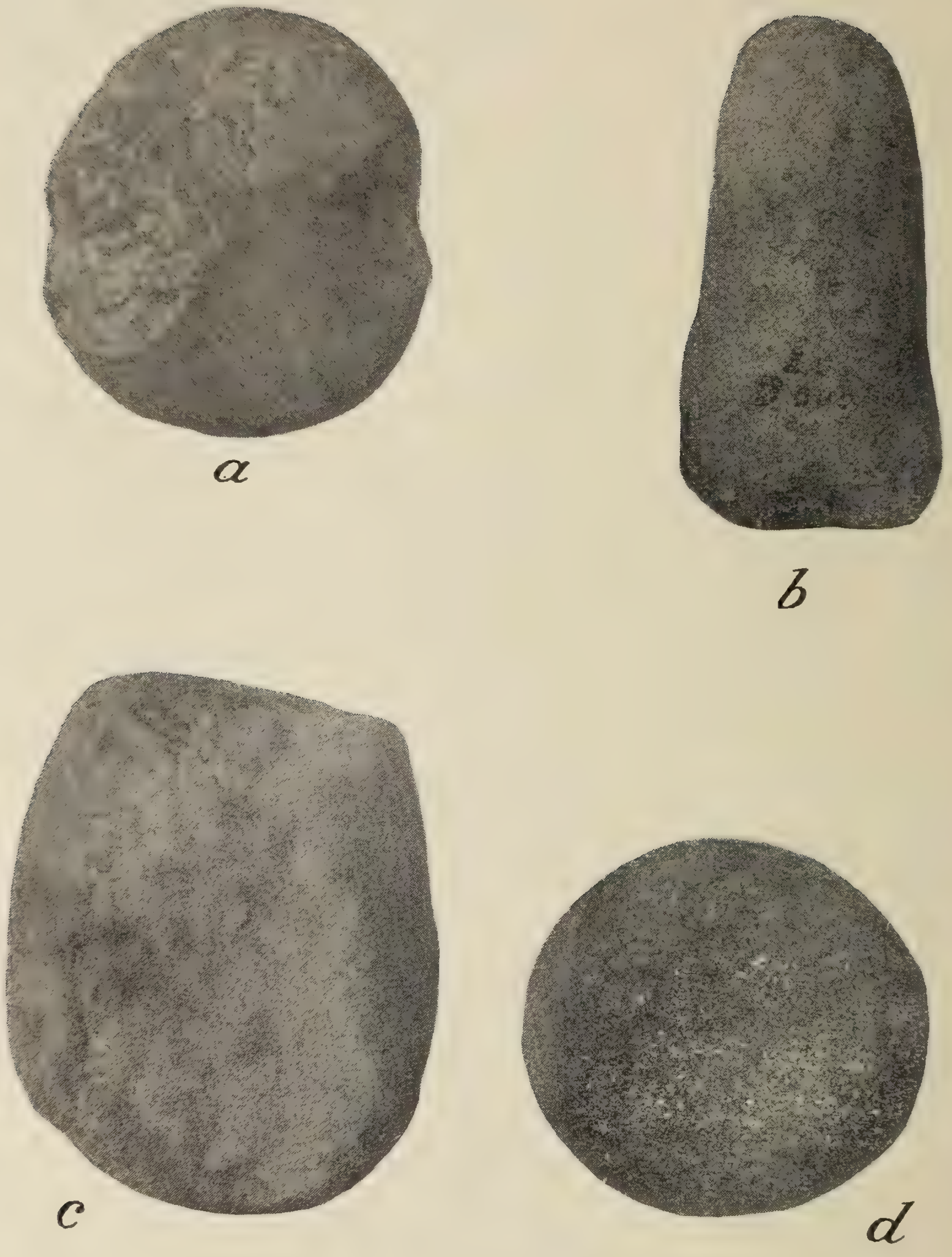

Fig. 17 *a-d* (20–7634, 8000, 7736, 7811). Stone Implements.

bling bony plates once forming the armor of huge sturgeons, while the teeth of sharks, the bones, and sometimes the scales of other fish, most of them beyond precise identification, together with the claws of crabs, show that the Shinnecock made good use of all the edible creatures the local waters afforded.

As to the method of taking fish, the shell-heaps yielded a few suggestions, among which was the presence of numerous flat pebbles, notched at the edges (Fig. 17a) as if to keep an encircling cord from slipping off. Similar stones may be seen in use as net-sinkers among some tribes today. Such a use for the objects in question is made more probable by historical data referring to the use of nets by nearby peoples.[1] A part of an antler fish hook (Fig. 18a) which, when perfect, probably resembled the bone hook found by Tooker (Fig. 18b), and a slender pointed bone object, so shaped as to suggest its use as a barb for a fish-spear (Fig. 18c), hint at other possible methods, as does the survival, among the neighboring mixed-bloods of today, of fish traps made of basketry of a style once used by most of the tribes of what are now the central Atlantic States.

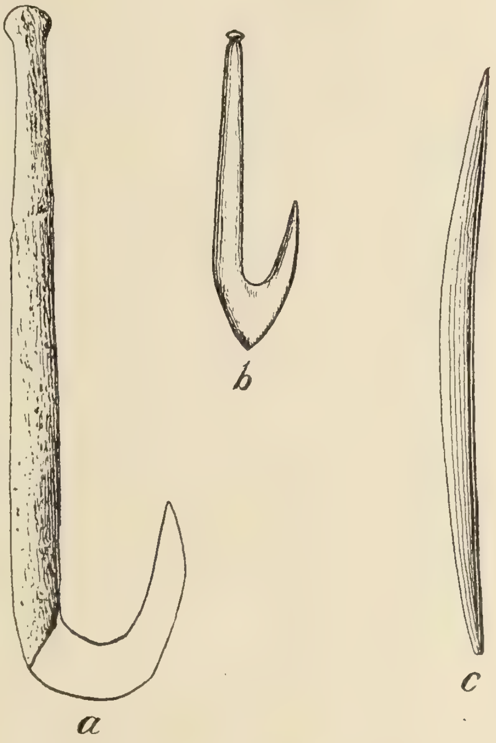

Fig. 18 *a* and *c* (20–7471, 7518), *b* (Tooker Collection). Fish Hooks and Barbs. *a*, Part of antler fish hook; *b*, Bone fish hook; *c*, Bone barb.

We cannot go so far as to state that these Indians actually hunted the whale, although fragments of a barbed antler harpoon head hint at such a possibility. Worked bones of one of these great creatures found in one of the wigwam sites show that they used the whale, whether they harpooned him on the high seas or found him dead on the beach.

Colonial records lead one to believe that they did both, for we find in a deed of April 29, 1648[2] that the Shinnecock, in selling a certain tract retained their hunting and fishing rights, and were to have the "ffynnes and tayles of all such Whales as shall be cast up" on the adjoining beaches; while an ordinance of October 7, 1672[1] "ordered that no Indian employed in the whaling business shall have more than one trucker coat for each whale that his company shall kill, or half the blubber, without the whalebone." Certainly, if Shinnecock "engaged in the whaling business" and their "companies killed whales" only thirty-two years after the coming of the whites, the presumption is strong that they did it before the Colonists arrived, about 1640.

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[1] Van der Donck, Adriaen, "A Description of the New Netherlands" (*Translated from the original Dutch by Hon. Jeremiah Johnson, Collections, New York Historical Society,* 2d series, vol. 1, New York, 1841), 209.

[2] Thompson, *op. cit.*, vol. 2, 87.

The records of the 1670's are full of contracts in which various Indians agreed to go to sea for certain colonists in pursuit of whales "and other great fish," promised to "use and improve our best skill and strength and utmost endeavor for killing" them, and avowed their intention of taking the best of care of boats and tackle, all for a certain stated payment; with a penalty of so much a day to pay for absence without good excuse.

Certain it is also that in later historic times many Shinnecock shipped as whalers out of Sag Harbor and their seagoing instinct is demonstrated by the tragic fate of twenty-eight of the men, including a large proportion of the full-bloods, who perished while trying to save the stranded ship *Circassian* as late as December 31, 1876.

Although so large a proportion of their food supply came from the sea, quantities of deer bones split for the marrow show that the Shinnecock by no means despised the venison that formed the staple food of so many tribes, while other bones taken from the shell-heaps and pits show that the flesh of the raccoon, muskrat, and even perhaps the lynx, was not neglected, and that due advantage was taken of the spring and fall migrations of wild fowl. Bits of bony carapaces extracted from among the shells of the middens tell of the use of various kinds of turtles as food, and deposits of the shells of land snails would seem to indicate that the primitive Long Islanders were not unfamiliar with that popular French dainty.

The finding of numerous arrow points of stone and of deer antler amid the village refuse and of bones showing wounds, probably made by such points, indicates that shooting with the bow and arrow must have been one of the methods for taking game. All knowledge of other appliances, whether weapons, traps, or snares is now lost. By analogy with styles used by most Eastern tribes, we may surmise that the Shinnecock bow was probably straight, five feet or even more in length, with a rectangular section; and that the arrows were also long, at least thirty inches, and were provided with three feathers. The modern Shinnecock mixed-bloods told the writer that their bow was of hickory, "as long as the man who used it."

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[1] *Idem.*, 154.

The products of agriculture are highly perishable, so it is not surprising that so few cobs and grains of corn or maize appeared in our deposits. The astonishing thing is that some did happen to fall in the fire to be preserved by charring for our instruction hundreds of years later. It is certain, from our knowledge of other eastern tribes, that the raising of corn, beans, and squashes must have been of considerable importance to Shinnecock diet; certainly more than the bare handful of charred cobs and grains would lead us to expect.

Most, if not all, Indian tribes took full advantage of such natural products as their environment afforded in the way of roots, nuts, and berries. The finding of charred hickory nuts leads us to surmise that the Shinnecock were no exception to this general rule. A rather pathetic bit of corroborative evidence appears in the Southampton records[1] where we find that:—

> At a general court held March 6, 1654, it was ordered that noe Indian shall digg for ground nuts on the plain nor in any other ground, upon penalty of sitting in ye stocks for ye first fault, and for the second to be whipped.

Cookery. To describe the cookery of a people after several hundred years have elapsed is no easy task, and cannot, of course, be done in detail. Yet, we are not altogether without clues, for our shell-heaps yielded many potsherds, and a few fragments of steatite vessels, some still so coated with deposits of soot or similar material that we can safely say that liquid foods were boiled in earthen kettles with pointed bottoms, or in oval or rectangular kettles of soapstone provided with handles at the ends, both set directly over the fire. But how could a vessel with pointed bottom be made to stand while the contents was cooking? Such a question naturally suggests itself, but is answered for us by John White of the Roanoke Colony of Virginia, 1585–1588, who made a drawing of a kettle of this type in use, supported by the sticks of firewood, and captioned it "The seething of their meate in Potts of earth."[2] Other tribes who have used pointed-bottom "potts" in recent years frequently support them with three or four stones, between which the point is set.[3]

Now, the question arises as to just what sorts of food were cooked in these vessels. The boiling of meat in the form of soups or stews is suggested by the numerous bones of deer and other animals, which, although split for the marrow fat, considered by most surviving Indians as a great dainty, show no trace of burning or contact with fire at the ends, and so were probably boiled. That some meat at least was roasted or broiled is suggested by the fact that some bones *do* show such burning. The very fact that the burning is mainly confined to the ends indicates that the middle portions were covered with meat at the time of exposure to fire. Tradition among the surviving mixed-blood Shinnecock tells us also that the old people made hominy and "suppawn" or mush from corn, both of which required boiling. Also, that they boiled corn with ashes to remove the hull, washed it free of lye, pounded it in a wooden mortar with a long stone pestle, mixed the resulting meal with berries or beans, according to the season, and finally boiled it in the form of dumplings. Such boiling, in ancient times, meant, of course, the use of the clay or stone pot.

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[1] *Idem*, 152.

[2] Holmes, W. H., "Aboriginal Pottery of the Eastern United States" (*Twentieth Annual Report, Bureau of American Ethnology*, Washington, 1903), pl. II.

[3] Skinner, Alanson, "Notes on the Bribri of Costa Rica" (*Indian Notes and Monographs, Museum of the American Indian, Heye Foundation*, vol. 6, no. 3, New York, 1920), 49.

An inspection of the thousands of oyster and clam shells lying about the village site revealed the fact that few, if any, showed any traces of forcible opening, yet seldom were the two valves found together. Comparatively few of them showed traces of fire, so we cannot conclude that they were usually opened by laying them on glowing coals. From these facts, it appears that most of them must have been steamed open, which could best be done in the oven pits of which we found so many examples. From the phenomena we observed in our digging, plus our knowledge of the use of such primitive fireless cookers by other tribes, the method of procedure must have been somewhat as follows: A bowl-shaped hole was dug four or five feet in diameter and two or three feet deep, in which a layer of stones was placed. On these, a good fire was kindled which was kept burning until the stones and the hole itself were piping hot. Then a layer of seaweed was laid in, upon which the shellfish were placed, together with meat or fish, or whatever else the Indians wished to cook. These were covered with more seaweed and earth drawn over the hole to keep in the steam. When the pit was opened some hours later, the shells were all open and the contents ready to eat. Some such arrangement as this was probably the progenitor of the New England clambake, borrowed from the Indians by the colonists.

We found no utensils especially intended for serving food unless the bowls made from the shells of the land tortoise, of which we unearthed a number of fragments, were so employed. The largest piece (Fig. 10) shows that the rim of the carapace had all been cut away and the rib-like bony structures inside scraped out to fit it for use as a bowl. In common with the Mohegan, the Lenapé, and other Eastern Algonkian tribes, the Shinnecock must have used bowls and spoons of wood; in fact we found

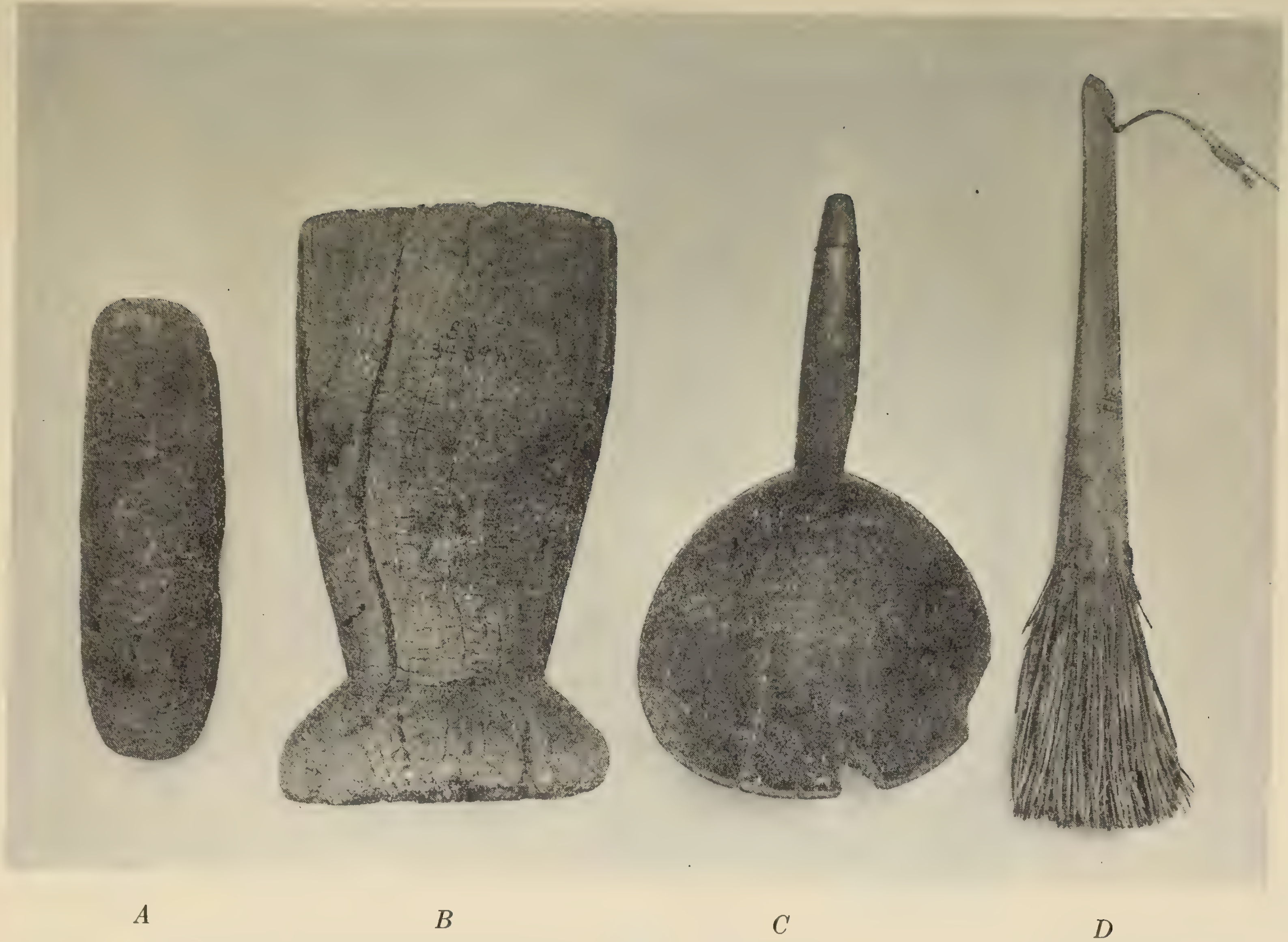

Fig. 19 *a–d* (50–3489b, 3489a 3491, 3494). Modern Shinnecock Implements.

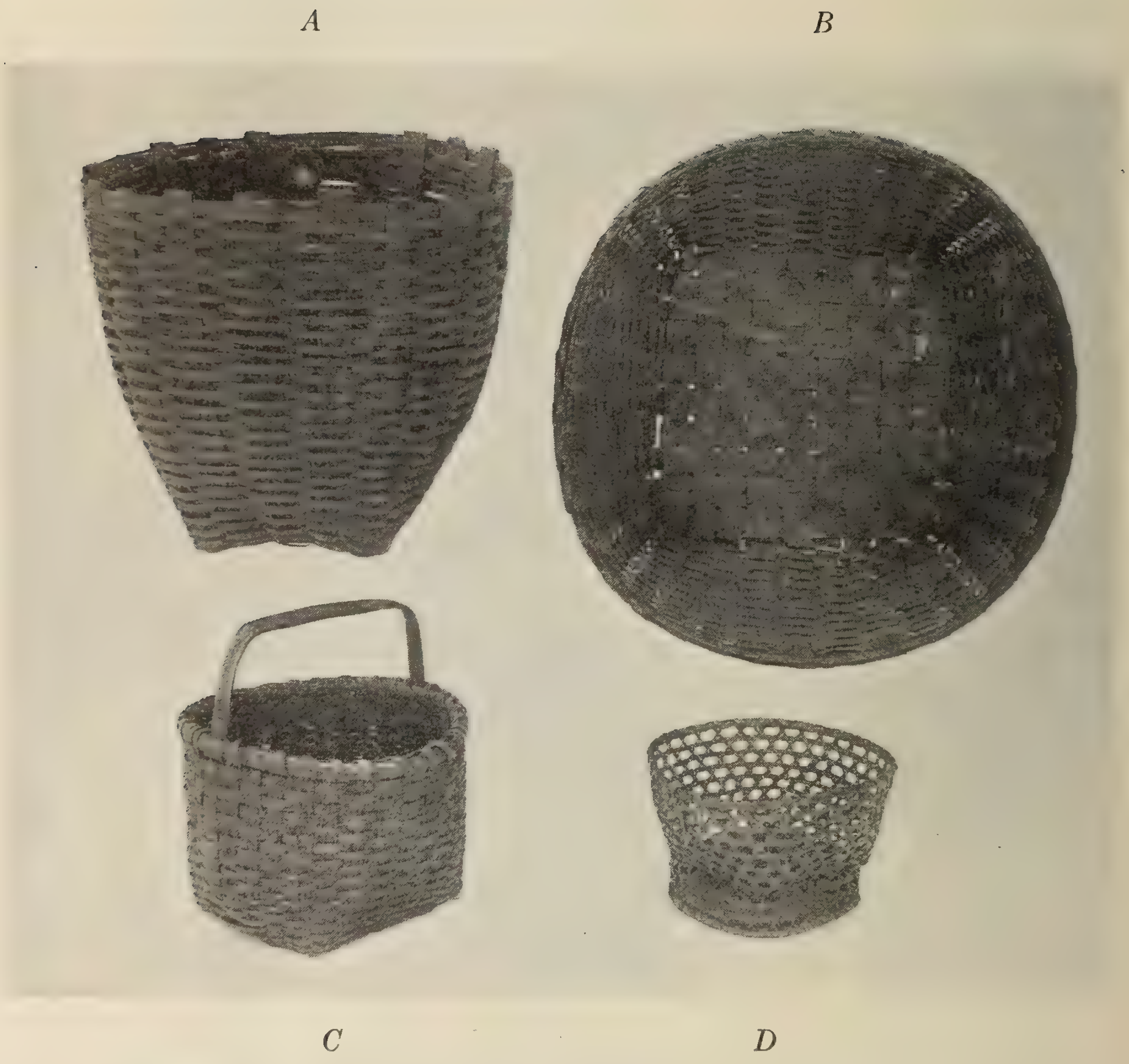

Fig. 20 *a-d* (50–3485, 3483, 3487, 3484). Shinnecock Baskets.

a few of the latter, resembling the butter ladles of the whites, among the surviving Shinnecock mixed-bloods (Fig. 19c) and early accounts[1] tell of bowls and water vessels made of gourds, some as big as a Dutch bushel, used by neighboring tribes.

Manufactures. An inspection of our collection shows that the ancient Shinnecock employed, as materials for their manufactures, flinty stones, tough stones, soft stones, deer antler, the bones of various animals, shells, clay for pottery making, vegetal fiber for making textiles and cordage, a little copper, and, of course, wood, although we found no actual wooden articles. Arrow points, however, imply arrows of wood. Arrows required bows of wood and the presence of these suggest that other wooden articles must have been used. Such reasoning is not needed, however, for our inquiries concerning woodwork among the modern Shinnecock mixed-bloods brought a number of facts to light, which are doubtless, in part at at least, applicable to the ancient people.

Use of Wood. Wooden mortars of two sizes were in general use: one large, about two feet high, used, with a wooden or a long stone pestle, for preparing corn; the other, small, less than a foot high, in which a stone pestle was employed to crush herbs. I failed to obtain any specimens of the first type, but succeeded in buying for the Museum the old herb mortar with its original stone pestle (Fig. 19ab), both handed down for generations in the family of John Thompson. Such mortars were made of sections of the trunk of the pepperidge tree, also called tupelo or sour-gum, the wood of which is noted for its toughness and freedom from splitting. The hollows in the mortars were made by laying on live coals and scraping out the charred portion, renewing the coals until the required depth was reached.

Baskets were made of white oak or maple splints in two principal forms, the one tall and cylindrical (Fig. 20a), the other flat and either circular (Fig. 20b) or rectangular in outline, with low sides. The winnowing basket for preparing corn was of the low-sided type. Fancy baskets (Fig. 20d), into whose composition sweetgrass sometimes entered, were formerly made, but this art has become extinct, the only basket now woven being a cylindrical type with a handle (Fig. 20c) identical with a style commonly made by the whites. The splints were sometimes dyed yellow, it is said, by a decoction of the inner bark of a species of oak. A pack basket, carried on the back by means of a band across the forehead was still in common use sixty or seventy years ago for transporting burdens of all kinds. Eel traps of cylindrical form, with a funnel pointing inward at one end through which the fish could enter but not escape, were also made from the white oak splints, a widely distributed type.

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[1] **Van der Donck, *op. cit.*, 188.**

Serviceable brushes for cleaning pots were made by splitting the end of a white oak stick into small splints as seen in Fig. 19d and large brooms were sometimes made in the same style. Broad flat wooden ladles (Fig. 19c) were common in old times, many of them resembling the butter ladles of the whites.

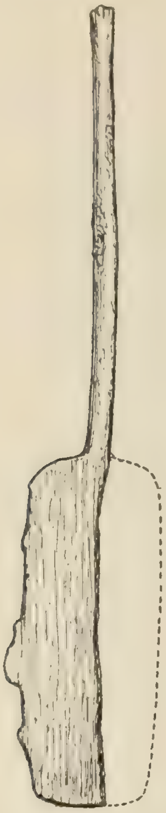
Fig. 21. Ancient Wooden Canoe Paddle. Tooker Collection.

Canoes, it is said, were made of great whitewood or oak logs, hollowed out with the aid of fire, like the wooden mortars. As for paddles, a certain Charles Conklin, while fishing for eels in the creek at Canoe Place, in February, 1880, found the larger part of an ancient oak paddle embedded in the mud. This implement (Fig. 21) measures 34¼ inches long, with a blade which must have originally been at least 8 inches wide. It found its way to the collection of William Wallace Tooker at Sag Harbor, and finally to the Brooklyn Museum.[1]

Stonework. The chipped implements of stone found on the site, probably variously used as arrowheads, spear points, knife blades, and drills, were usually made of white quartz, which exists in abundance in the form of pebbles on the nearby beaches, together with less frequent pebbles of jasper and chert of different colors which were sometimes employed. Argillite was the only exotic material used for chipped implements and this was probably brought in from what is now New Jersey by intertribal trade, already fashioned into implements. The triangular form of arrow point, usually of quartz, as before stated, (Fig. 22a, c), was the predominating type; the stemmed forms were generally, but not always, of other materials (Fig. 22d, e, f). The use of arrow points in hunting has been discussed; that they were also employed in war cannot be doubted. As may be seen from the typical specimens illustrated (Fig. 22) the arrow points of the Shinnecock are rather irregular in form and crude in finish.

Experiment has shown that the average stone knife was most efficient, not for whittling, but in cutting bone or wood when used as a

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[1] Thanks are due to Mr. Foster H. Saville for photographs and information concerning this paddle and other objects in the Tooker Collection. The paddle and the fish hook have been published before. See Tooker, *op. cit.*

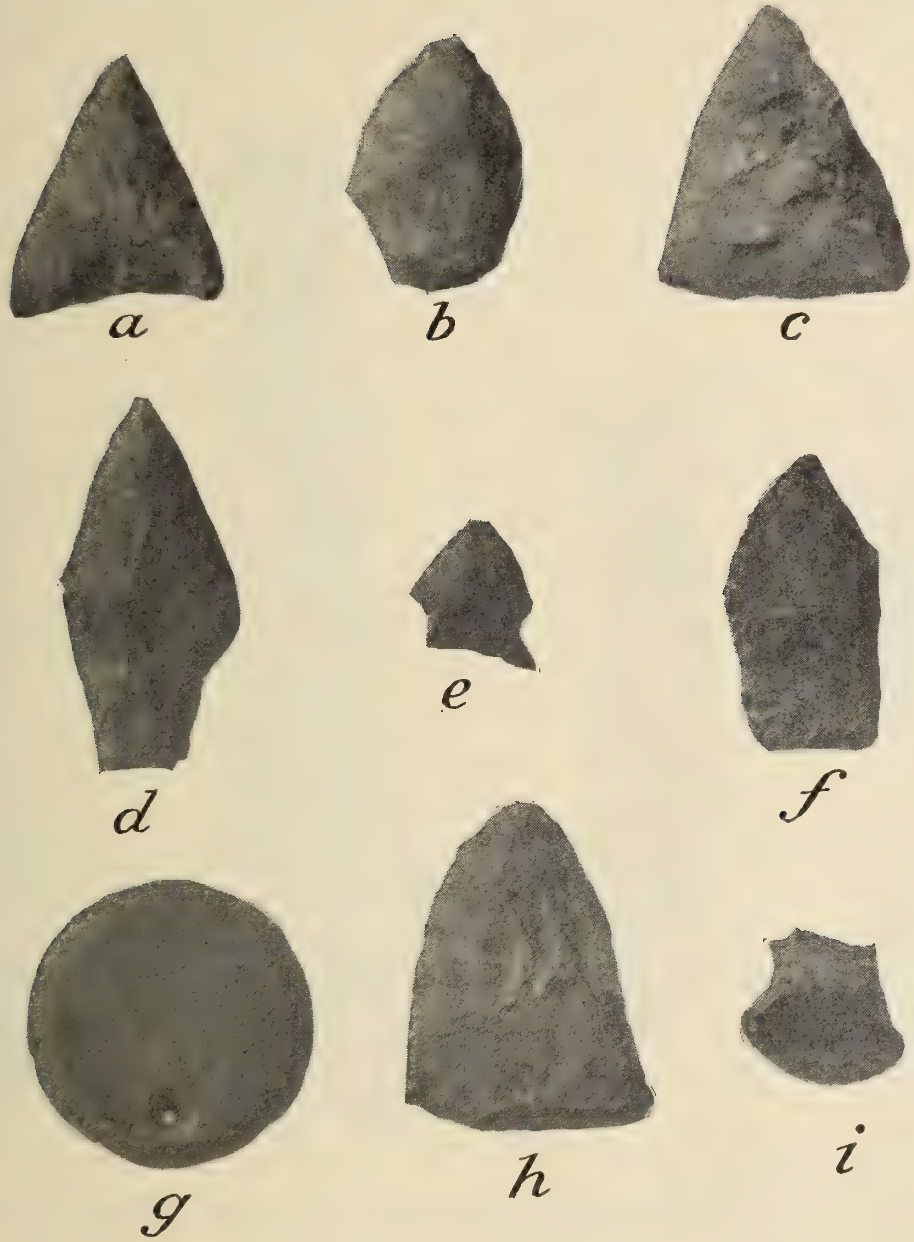

Fig. 22 *a–i* (20-7960, 7990, 7683a, 7857a, 7300, 7837, 7859, 7605, 7465). Chipped Implements and Clay Stone Pendant.

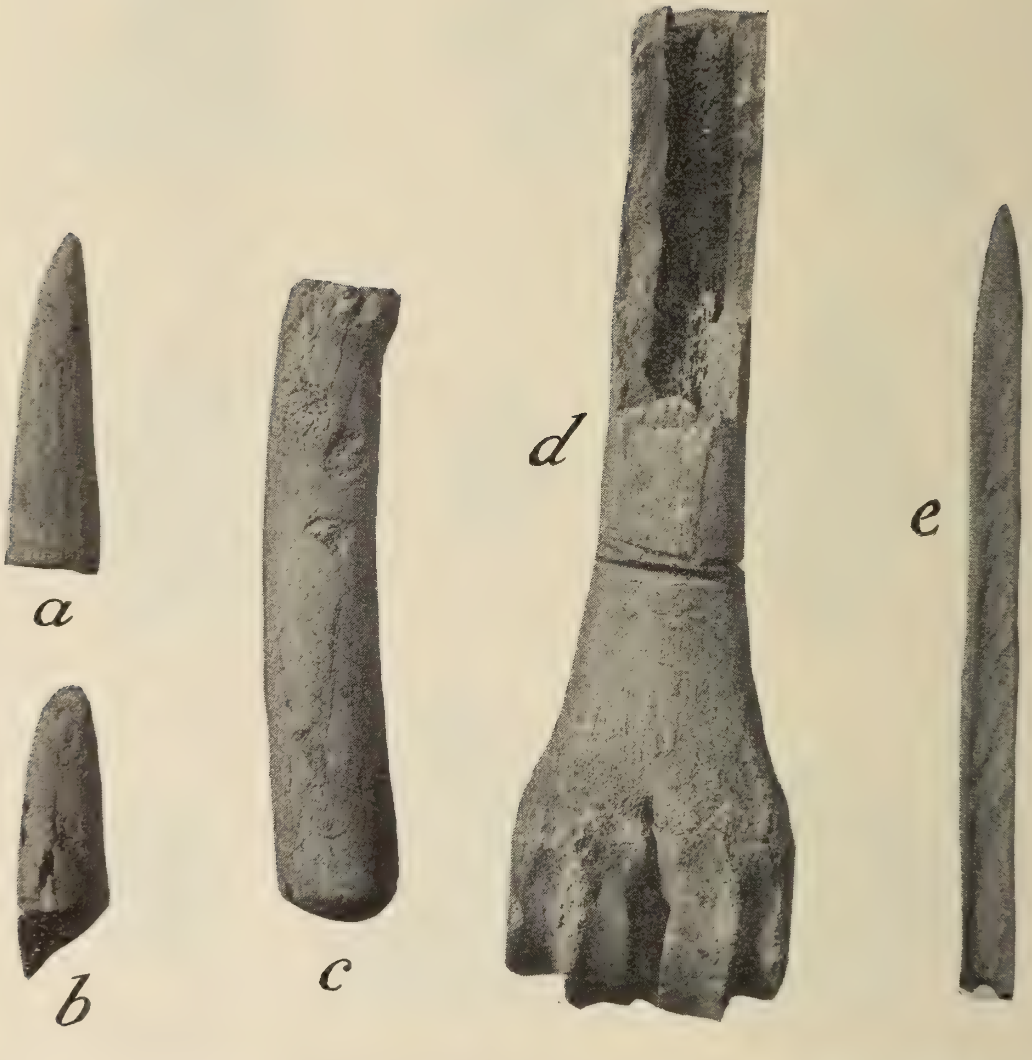

Fig. 23 *a–e* (20–7580, 7580, 7927, 7433, 7544). Objects of Bone and Antler.

saw, a process illustrated by many specimens of bone and antler (Fig. 23d) found on this site which have been sawed around with a stone knife and then broken off. Another use of the stone knife was for grooving bones lengthwise until they were divided into long strips suitable for the manufacture of needles or awls. This process is also illustrated by several specimens, and experiment has shown its practicability. Undoubtedly, stone knives were also employed in skinning animals and in cutting meat.

Few drills were found in our excavations, although objects of stone and bone and fragments of pottery showing drilling were not uncommon. Probably the tip of an arrow-head answered all ordinary purposes, especially as, in almost every case, the drilling was done from both sides of the object to be perforated, making a long drill unnecessary.

Chipped scrapers of different kinds were nearly as numerous as arrow points, the sharply bevelled type (Fig. 22h, i) predominating; quartz was the favorite material, or at least the most used, although a few were made of chert and jasper, and one of argillite. Several had been made of broken points re-chipped to give the necessary bevelled edge. Besides their use, noted among other peoples, for cleaning the flesh side of skins from any bits of fat or meat remaining after the preliminary scraping with larger implements, these scrapers were probably employed for scraping down arrow-shafts in much the same manner as the modern carpenter uses a bit of glass, and for shaping and sharpening bone awls, which sometimes show distinct traces of this process in the form of slight longitudinal grooves which may be reproduced by experiment.

Large flakes, three or four inches in diameter, usually showing on one side the outer surface of the boulder from which they had been struck, were sometimes chipped so as to produce a disk-shaped implement with a rather blunt edge about the periphery, such as is used by several tribes today in softening skins.

The preliminary flaking in the making of chipped implements seems to have been with hammerstones of which we found two types here: one, the natural pebble bruised about the edge by use (Fig. 17c); the other a more or less circular form with a pit in the middle of each flat side for the reception of the thumb and finger (Fig. 17d), the former variety being the most abundant. Such hammerstones were applied directly to the material in removing large flakes, but punch-like cylinders of antler (Fig. 23c) were probably sometimes interposed between the hammerstone and the edge of the blade to be flaked, and the points were finished by removing fine scales from their edges by pressure with a piece of bone or antler. The large number of unfinished implements, pieces rejected for defects, and flakes, testify to the extent of the industry.

The crudest chipped implements found were the so-called choppers, merely beach pebbles of quartz brought to a rough edge at one end by the removal of a few flakes which fitted them for use as a sort of ax for which no handle was necessary. Sometimes such choppers show the wear of considerable service, but it seems probable that most of them were shaped with a few strokes to serve the need of a moment and were then discarded.

Hammerstones were doubtless used for many purposes, but their effects may be best seen today on the unfinished celts that were being slowly shaped by tedious battering and pecking (Fig. 17b). Broken finished specimens showing careful polishing were unearthed, but no complete examples appeared of this grooveless type of ax, which we know, from complete examples found elsewhere, was mortised into a club-like wooden handle. No examples of the grooved ax, whole or broken, came to light during the digging on the site, but it was probably used by the Shinnecock, unless they differed from most Long Island tribes in this respect, while resembling them in many others. Stone axes of either type were useful in breaking firewood at home and the celt type especially for splitting the skulls of enemies while on the warpath, but were not capable of chopping, as we know the term. For felling trees and cutting them into lengths, it was necessary to apply fire, then to use the stone ax to cut away the charcoal and batter loose the fibers so that the fire might take fresh hold, and repeat the process until the work was done. The marks of a stone ax may be seen on the ends of the large bone (Fig. 5), a relic of a whale cut up by the ancient Shinnecock, mentioned before as found in one of the wigwam sites we explored.

Although we failed to find a good example in our digging, there is no doubt that the ancient Shinnecock used the long cylindrical stone pestle, for a number were found still in use among their mixed-blood descendants who all agreed that the implement formed part of their ancient equipment. Such pestles were undoubtedly made by the same battering and pecking process used in the manufacture of stone axes. The long pestles, as before noted, served to grind corn in deep mortars of pepperidge wood; but that these were not the only pattern used is shown by several shallow mortars of stone found in our excavations. Fig. 26 is a good example, consisting of a stone slab with a cup-shaped hollow on one or both sides. Still another type was a flat slab showing traces of rubbing. Instead of a pestle a water-worn beach pebble was used as a muller with the shallow mortars which may have been employed occasionally to grind corn, but probably served mainly for grinding tempering materials and clay

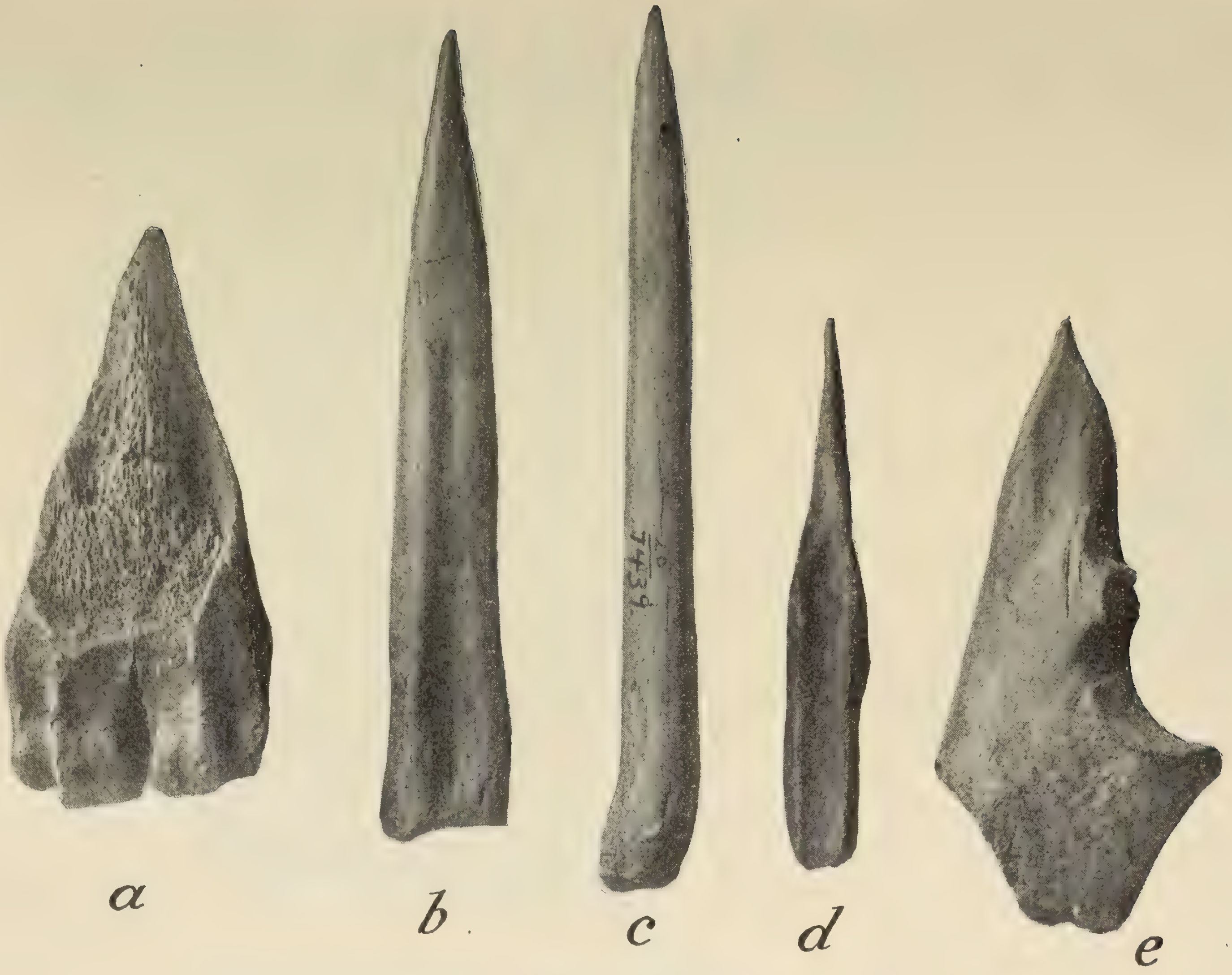

Fig. 24 *a–e* (20–7582, 7535, 7439, 7474, 7622). Bone Awls.

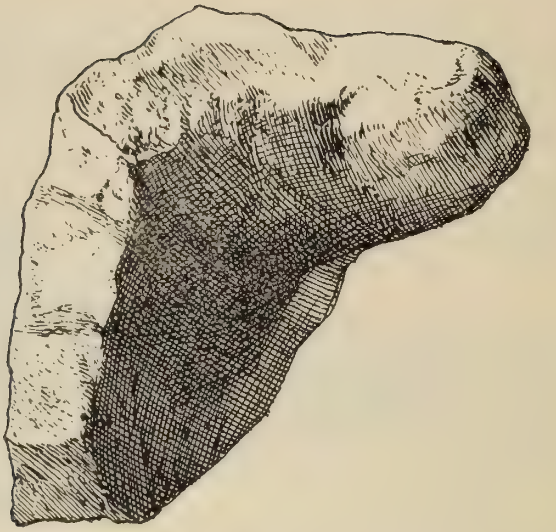

Fig. 25 (20–7492). Fragment of Steatite Vessel showing Handle.

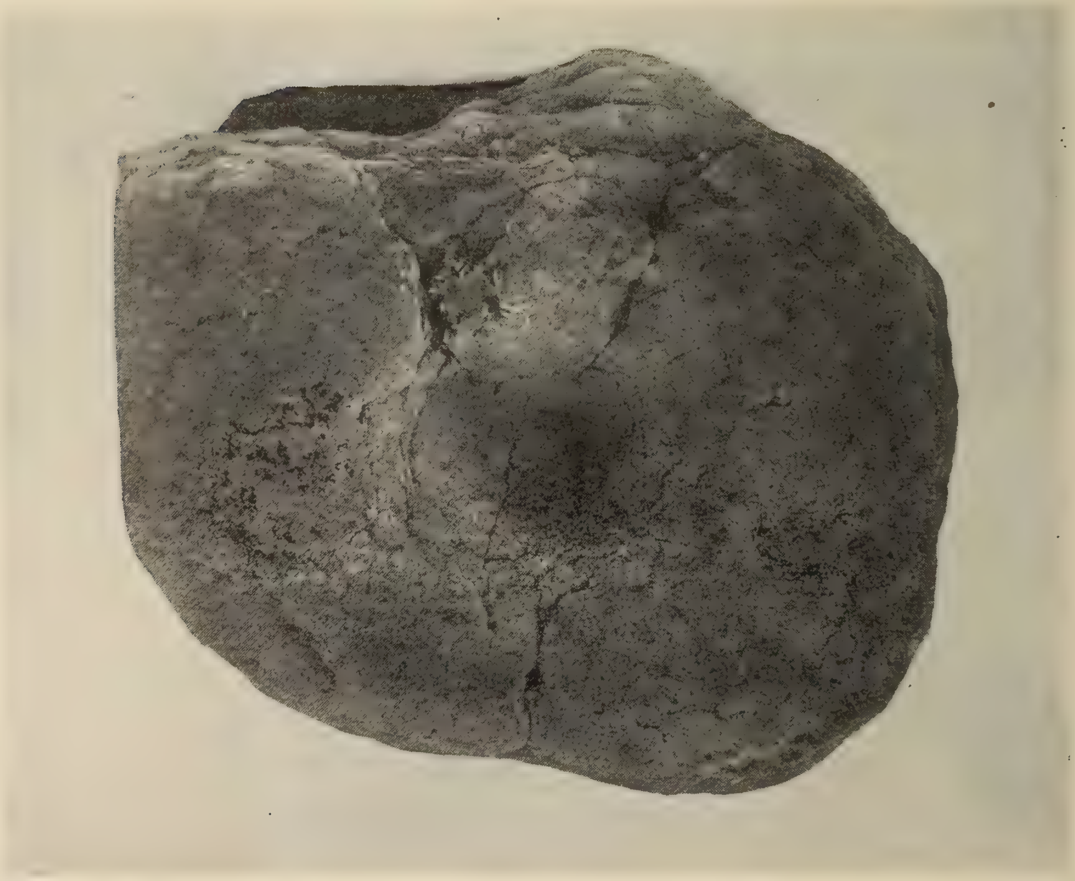

Fig. 26 (20–7757). Stone Mortar.

for pottery making, and for crushing dried meat, dried fish, and dried berries.

We have no reason to suppose that the oval steatite vessels provided with lugs at the ends, of which we found several fragments (Fig. 25), were made by the Shinnecock. These were probably imported ready made from what is now Connecticut, the nearest point where aboriginal soapstone quarries have been found.

A few small fragments of steatite pipes were found which, when perfect, probably resembled the specimen found nearby by Tooker (Fig. 27), a form which required a separate wooden stem. We have no direct data on how they were made, but the soft stone must have been easily cut and drilled with the usual flint knives and perforators.

The circular pendants made from claystone concretions (Fig. 22g, Fig. 8), one perforated near the edge, the other in the center, could be easily reproduced with similar implements, and the crude design scratched in with a flint point. The scratchings on the specimen shown in Fig. 28 must have been similarly made; it seems to be a fragment of a similar pendant, but of elongated form.

Bone and Antler. Implements made of bone and deer antler were quite numerous, especially the awls, of which we found several types. The best were made from strips cut from the metapodial bone of the deer, carefully rounded and polished (Fig. 24bc). Others were made from the ulna or other large bones of the deer, with the joint left to serve as a handle (Fig. 24ae), but the majority were merely sharpened splinters of bones that had been split open for the marrow (Fig. 24d). The bones of birds or small mammals were more rarely employed in making awls, being too fragile to stand hard service. Most awls were probably used in sewing to make the holes in the skin or other material through which the stiff sinew or fiber thread was thrust. Some were doubtless used in basket making, for sewing sheets of bark together to make trays and buckets, and some perhaps as forks for lifting hot meat from the pot.

Next to the bone awls in point of number were the conical arrow points made from the tips of deer antlers cut off, sharpened, and drilled at the base for the reception of the shaft (Fig. 23a). Sometimes a little projection was left at one side of the hole to serve as a barb (Fig. 23b). That arrow points were also occasionally made of bone is shown by the finding of various fragments, one of which, with a restoration based on the style used by neighboring tribes, may be seen in Fig. 29.

A number of fragmentary bone needles also appeared here (Fig. 23e), made, as in the example illustrated, of bird bone; or more often of a slightly curved strip from a deer's rib; thin and flat, with the eye near the middle, and entirely too broad to use in ordinary sewing. Almost identical needles are still employed among the Central Algonkin tribes, however, for stringing rushes together to make the large mats with which they cover their dome-shaped winter wigwams, so it seems probable that our Shinnecock needles found some similar use. We have historical evidence, to be recounted later, that they used rush mats.

Among the rarer objects were cylinders of antler (Fig. 23c) whose battered ends suggest their use as flint-flaking implements in the manner previously described, a broken harpoon point of deer antler with a perforation and one lateral barb, and a slender barb of bone (Fig. 18c) which may have formed part of a fish spear or may perhaps have been lashed to a wooden shank to form a primitive fishhook, such as is still used among the Montagnais and other tribes. The harpoon cannot be illustrated here, because an important part of it has been lost since finding, but we can state that it had one large lateral barb and was perforated. The use of bowls made of the carapace of the land tortoise, of which numerous fragments (Fig. 10) were found, has been mentioned. That beaver teeth were used for some purpose is assumed from the finding of worked fragments (Fig. 29a). It is known that some tribes had wood-carving tools made of beaver teeth, so perhaps the Shinnecock used them in this way.

The bone implements, complete, broken, and unfinished were studied with some care, and after several attempts had been made to reproduce them in fresh bone with primitive tools, we finally succeeded, and were able to analyze the processes employed. These were sawing, grooving, scraping, grinding, drilling, and polishing. Sawing was accomplished with the edge of a flint knife, a large arrow point, or even with the edge of a large flint flake and was used when it became necessary to cut a piece of bone or antler in two transversely. The edge of the implement was worked to and fro with a saw-like motion against the material until a deep groove was formed. This was continued until it encircled the bone or antler (Fig. 23d) which could then be easily broken in two. Grooving, for the purpose of cutting bone lengthwise, was accomplished with the point of any flint implement or flake. If a strip of bone were needed for the manufacture of an awl, the first step was carefully to mark two parallel longitudinal lines on the surface of the bone selected. These were scratched deeper and deeper with the point of the implement until they became grooves, and finally, until the grooves broke through into the marrow cavity. These slits were connected by a transverse sawing at the ends, whereupon a strip of bone fell out ready for further elabora-

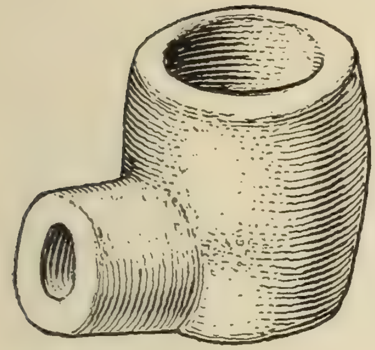

Fig. 27

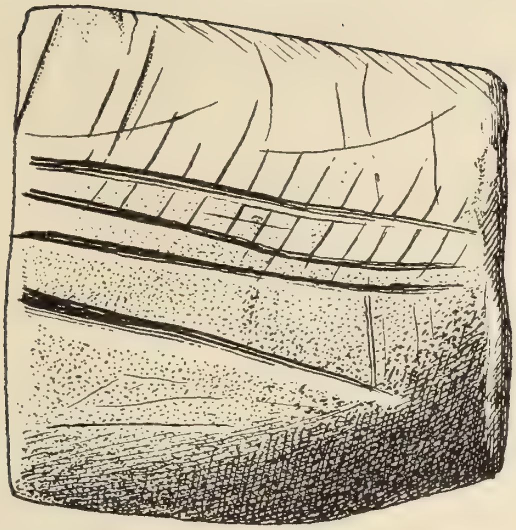

Fig. 28

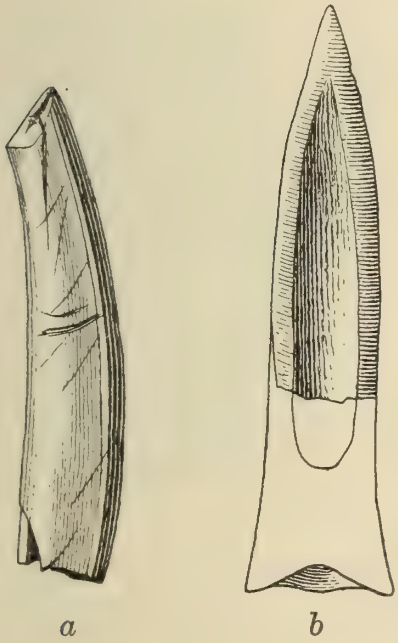

Fig. 29

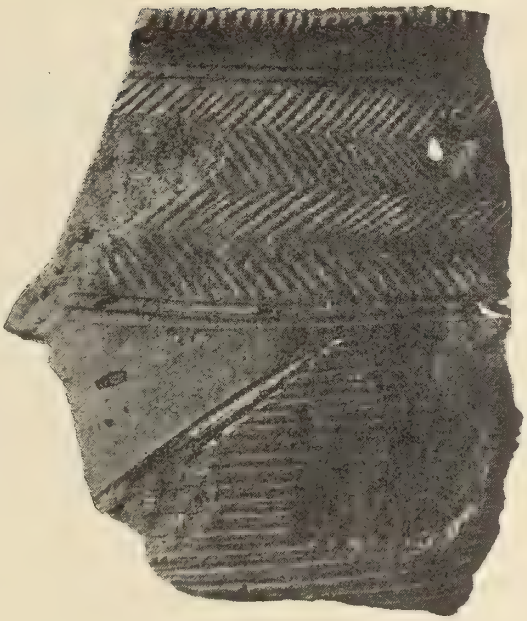

Fig. 30

Fig. 27. Steatite Pipe. Tooker Collection.

Fig. 28 (20–7589). Part of Engraved Stone Pendant.

Fig. 29 *ab* (20–7530, 7553). Worked Beaver Tooth and Restoration of Bone Arrow Point.

Fig. 30 Potsherd, Lenapé Type.

tion. The next step was to scrape off the sharp edges and work out a rough point with a bevelled edge scraper, or even a flint chip, used much as a modern carpenter scrapes wood with a piece of glass; then a gritty stone was employed to grind it into final shape. The marks of this grinding may be seen on the awl (Fig. 24b). The final polish was then put on by rubbing with the smooth surface of a beach pebble. The eyes of the broad bone needles can easily be reproduced with the point of an arrowhead rotated after the manner of a drill, first on one side of the needle until partly bored through, then on the other. Since the cavities in the bases of antler arrow points for the reception of the shaft were deeper they had to be bored with a narrow flint drill which worked best, as experiment shows, attached to a short wooden handle.

Pottery. One nearly complete pottery vessel was secured (Fig. 12) and enough parts of another to restore its form, together with many fragments, all of which served to show that the typical ancient Shinnecock pot was somewhat egg-shaped, with pointed base and slightly expanded mouth, of the archaic Algonkin type found all along the Atlantic Coast from Virginia to Maine.[1] This type was, however, modified about the mouth of the Hudson and in New England by Iroquian influence which seems to have first made itself felt shortly before the coming of the whites. In capacity, these vessels seem to have varied from about six quarts to perhaps four or five gallons. That they were used directly on the fire may be seen by the smoked and blackened condition of some of the bottoms. Sometimes, when cracked, they were repaired by boring a series of holes in pairs on opposite sides of the split and then lacing it together, probably with thongs. Such repaired vessels could not very well have been used in cooking, but they must have made good water jars when properly pitched to prevent leakage.

In one pit, we were lucky enough to find the greater part of a potter's outfit, which shed considerable light on the Shinnecock method of making earthenware. The first stage was illustrated by a lump of raw clay and some clay thoroughly mixed with the crushed shells here often used as tempering material; the second, by pieces of clay coils and part of a small unfinished vessel (Fig. 6), all preserved by accidental burning, which showed that the clay had been worked out into long rolls with which the vessel was then built up, coil on coil, the coils being smoothed and blended as the work proceeded. The pit even yielded some tools with which the blending was done, in the shape of two beach pebbles

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[1] Holmes, *op. cit.*, 150–158, 175–179.

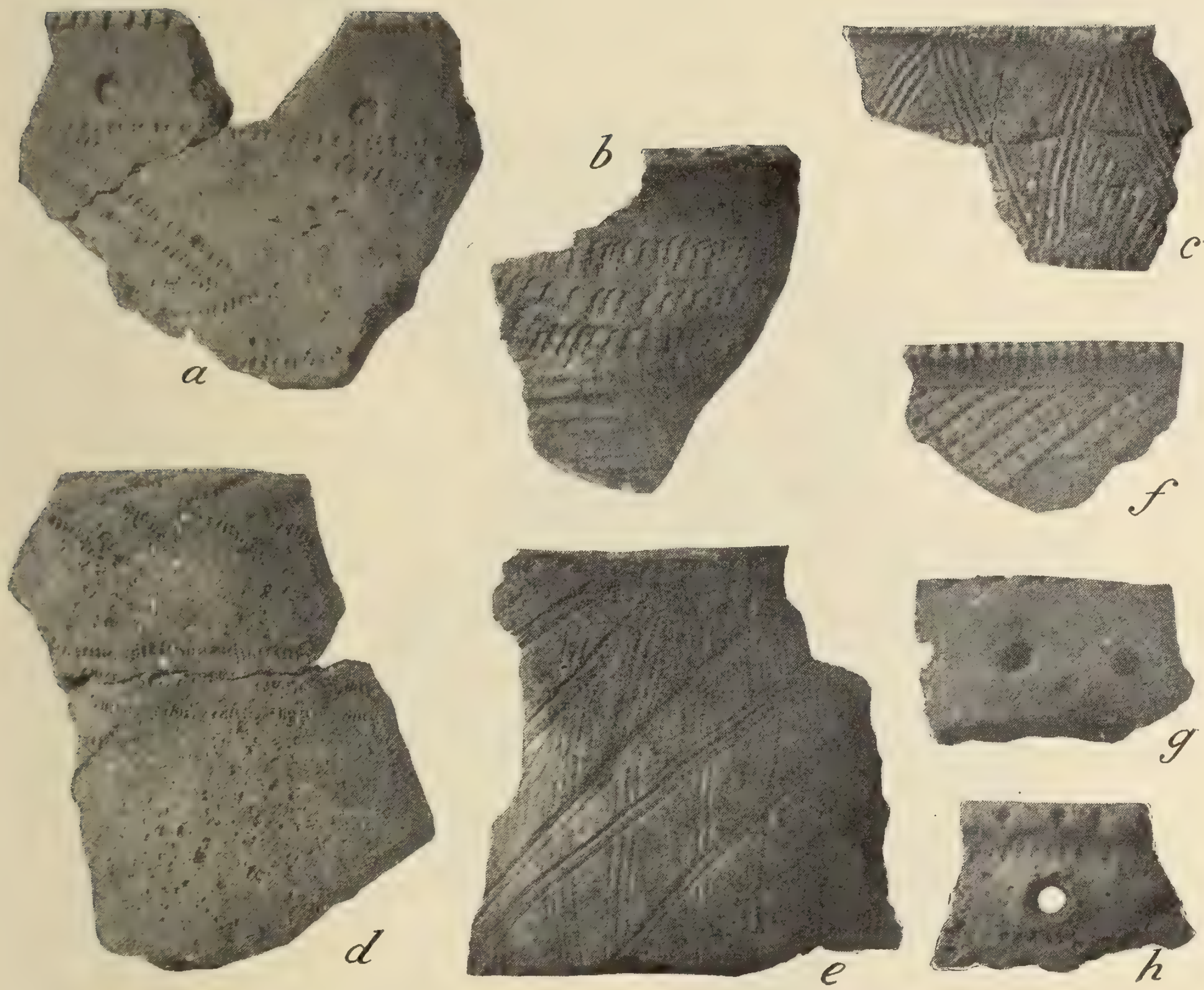

Fig. 31 *a–h* (20–7985, 7935, 7810, 7985, 7598, 7985, 7967, 7847). Potsherds showing Decoration.

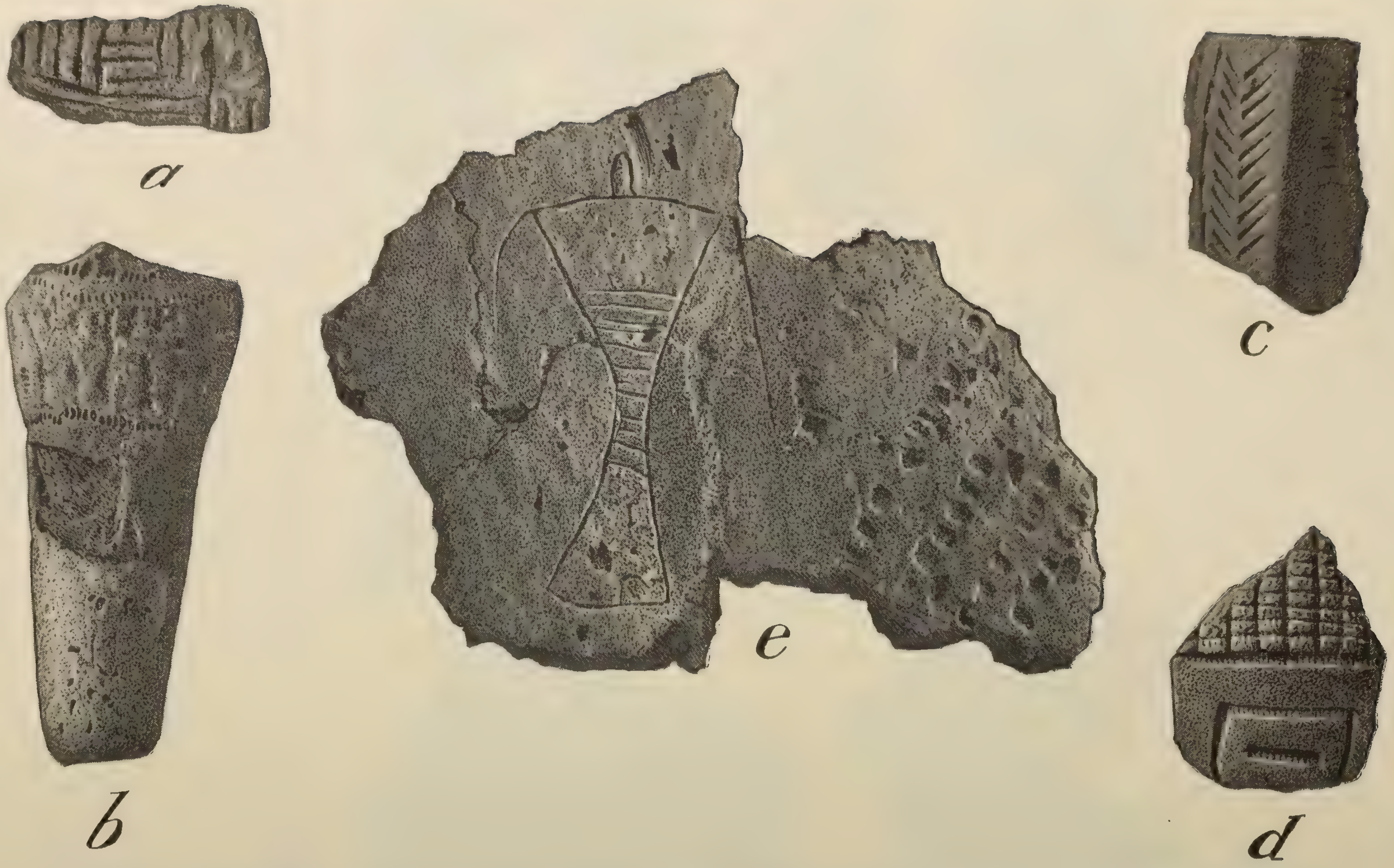

Fig. 32 *a–e* (20–7920, 7453, 7293, 7451, 7829). Pipe Fragments and Potsherd bearing Sketch of Bird.

showing wear and still daubed with clay (Fig. 4a). In other parts of the site were found clay-covered shells of the "hen clam," the worn edges of which showed long use for such purposes (Fig. 4b).

Some years after these excavations were made, the author had occasion to visit the Indians of South Carolina, where the making of pottery by aboriginal methods was found to be a still living industry. I was interested then to observe that the Catawba used the coil method, blending the coils with smooth pebbles kept constantly wet, and with fresh-water clam shells which showed wear in exactly the same place as the "hen-clam" pottery scrapers we had found on Shinnecock Hills. After completing the vessels the Catawba dried them a few days in the shade and then arranged them around a brisk fire, mouth to the blaze. After a while, they assumed a darker color, and when this had become uniform, a sign the vessels were hot enough, the blazing brands were raked out of the fire, the vessels inverted over the coals and hot ashes which were pushed up around them, and the whole covered thickly with pieces of dry bark pulled from old pine stumps. When the bark had burned away the red-hot vessels were pulled out and allowed to cool around the smouldering embers.[1] Probably the ancient Shinnecock dried and fired their pottery in a somewhat similar manner.

The decoration of Shinnecock ware was effected while the clay was still fairly soft. The crude patterns were produced by several methods, one of them the ordinary one of incising with a sharp point, possibly that of a bone awl (Fig. 31f, Fig. 30). Another method was to wrap a twig in fiber twine and impress this upon the plastic clay (Fig. 31*a*, *d*, *h*), while a third, which seems characteristic of the eastern end of Long Island, was to drag a section of the edge of a scallop shell along in such a manner as to produce from two to six parallel grooves, and sometimes, instead of dragging it, to make successive imprints of the edge of the shell. This method may be seen on the complete vessel (Fig. 12) and on several of the fragments (Fig. 31*b*, *c*, *e*). A punctate form of decoration was also produced by imprinting the round end of a stick (Fig. 31a, g, h). A finish for the body of the vessel was often applied with a paddle wrapped in fiber cord, while the inner surface was sometimes marked by scraping with the edge of a stone serrated by chipping, as was one side of the smoothing stone shown in Fig. 4a.

Quite a number of fragmentary pottery pipes were found, some of them nicely decorated, as may be seen in Fig. 32. These differed from the stone pipes found in this region by Tooker (Fig. 27) and others in that they were provided with a short stem, sometimes round, sometimes flat in section, made in one piece with the bowl, and did not require a separate wooden stem. How they must have appeared when complete is shown by the perfect specimen (Fig. 34) found at Canoe Place, and now in the Museum of the American Indian, Heye Foundation, as the gift of the Long Island Historical Society.

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[1] Harrington, M. R., "Catawba Potters and their Work" (*American Anthropologist*, N. S., vol. 10, pp. 399–418, 1908).

Weaving. That the Shinnecock, in common with most of the Eastern Algonkian tribes made numerous rush mats and wove a variety of sacks and bags, burden straps, and perhaps even garters, belts, and garments out of fiber cannot be doubted; but the only specimens we found to prove it were a few fragments of native cloth preserved by charring (Fig. 3). Noticeable features were the coarseness of the fiber composing the cord of which the fabric was woven, and the fact that the weft threads were run in pairs with a twist together between every strand of the warp, a simple form of the twined weave so characteristic of aboriginal textiles in most parts of North America where any weaving was done at all.

We can prove, as before stated, the use of mats among the Shinnecock and neighboring Indians by several historical references; for instance, in the agreement between Lion Gardiner and the Indians[1] in which he grants them "liberty to cut in the summer time flags, bull-rushes and such things as they make their mats of" on a certain tract "provided they do no hurt to the horses" pastured there.

Art and Ornament. The decorative art of the Shinnecock, as shown in wood carving, in the painting of designs on various objects, and in whatever form of embroidery they may have used (probably with dyed deer hair) has been lost beyond recovery. All that remains for us to study are their pottery decorations on vessels and pipes, and a few markings on stone and wood. The story is soon told, for the former are of the simplest. Most abundant are combinations of straight lines forming bands parallel to the rim of the vessel, combined with angles or chevrons which may point horizontally (Fig. 31a, d), or vertically (Fig. 31c). Sometimes lines singly or in parallel groups may run vertically, instead of horizontally, or may be placed diagonally, as may be seen in the whole vessel (Fig. 12), and in the potsherd (Fig. 31e), and cross-hatch patterns sometimes appear (Fig. 31f).

These designs, as before noted, were usually produced by the imprints of cord-wrapped twigs (Fig. 31a, d, h); by groups of parallel lines drawn with pieces of the edges of scallop or mussel shells (Fig. 31c, e, Fig. 12); by imprints of the edges of such shells (Fig. 33b, Fig. 12); and by marks and notches made with the point of a sharp instrument such as a bone awl (Fig. 31f). The lines and angles are often interspersed with circular imprints of the end of some blunt cylindrical instrument (Fig. 31 a, g, h).

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[1] Southampton Records, *op. cit.*, 170.

The decoration of most of the pottery was exceedingly crude, with no attempt at color work, no curved lines, and with a very few exceptions, no attempt was made at elaborate patterns even in straight lines and angles. There was one exceptional sherd, however, that showed a tasteful, well-executed, and fairly complex pattern (Fig. 30), consisting of a band of closely set chevrons forming a herring-bone design surmounting a band of large triangles filled with parallel horizontal lines and pointing upward, the spaces between them being left plain. This, however, is so divergent from Long Island pottery in general, and resembles so closely the Lenapé ware found near Trenton, New Jersey,[1] that the chances are that it was obtained in trade from that region and was not of Shinnecock manufacture at all. The sherd shown in Fig. 31f may also belong in the same category.

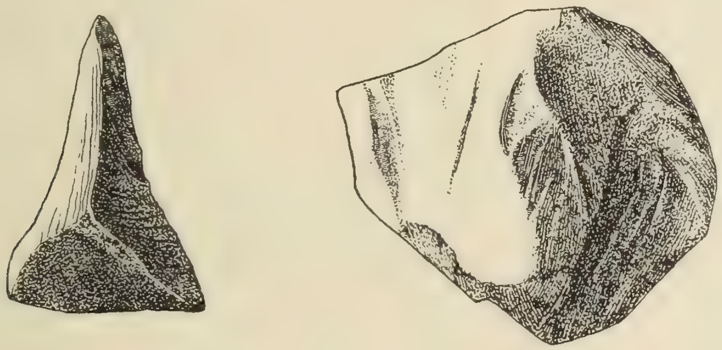

Fig. 33 *ab* (20–8036, 7779). Black and Red Paint Stones, Graphite and Limonite, respectively.

The designs just described are all of a purely geometric character; we did find, however, a few attempts at realistic ornament. One of these is the crude drawing of a bird scratched on a stray potsherd (Fig. 32e), an hourglass-shaped figure whose head is represented by a slight projection and the wings by drooping lines. It is particularly interesting on account of its practical identity with drawings still made by the Central Algonkin tribes and their neighbors to represent a Thunderbird, a race of mythic beings who were thought to be the patrons of warriors, the bringers of rain for the crops, and the guardians of mankind against water monsters.

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[1] Volk, Ernest, "The Archæology of the Delaware Valley" (*Papers, Peabody Museum of American Archæology and Ethnology*, vol. 5, 1911), pls. CXII, CXIII, CXIV.

Perhaps also connected with tribal tradition are the rough sketch of the head of some animal, possibly a lynx, engraved on one side of a pebble (Fig. 7); while a slight stretch of the imagination might interpret the markings on one side of the circular gorget seen in Fig. 8a as the profile of a turkey, while those on the reverse side may represent a human eye (Fig. 8b).

We found little to indicate personal decoration, except the circular gorgets or pendants (Fig. 22g, Fig. 8), a coarse shell bead, since lost, and the copper bead (Fig. 11) which may be made of native metal. The paint, red and black, ground from deeply scored bits of limonite (Fig. 33b) and graphite (Fig. 33a) was probably, for the most part, applied to the faces of the Shinnecock.

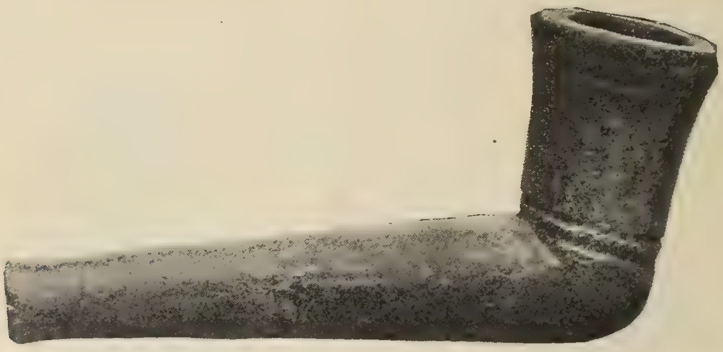

Fig. 34. Earthen Pipe, Canoe Place. Courtesy of the Museum of the American Indian, Heye Foundation.

Trade. As previously noted, the presence of implements made of purple argillite in the refuse deposits indicates trade with the tribes of New Jersey, as does the appearance of a few sherds of typical Trenton Lenapé pottery; fragments of steatite cooking vessels and pipes show commerce with Connecticut tribes (the nearest quarries were there), while a number of objects, all found in the upper layers of the deposits, bear witness to the latter day trade with the whites. Examples of these are shown in Fig. 15 and consist of a gun flint (*a*), the handle of a brass kettle (*b*), and part of a trade pipe of clay (*c*).

If the copper bead, which, as may be seen from the drawing (Fig. 11) has been made by rolling a flat bit of the metal into cylindrical form, should prove on analysis to have been made from a native nugget, intertribal trade from so distant a region as Lake Superior would be estab-

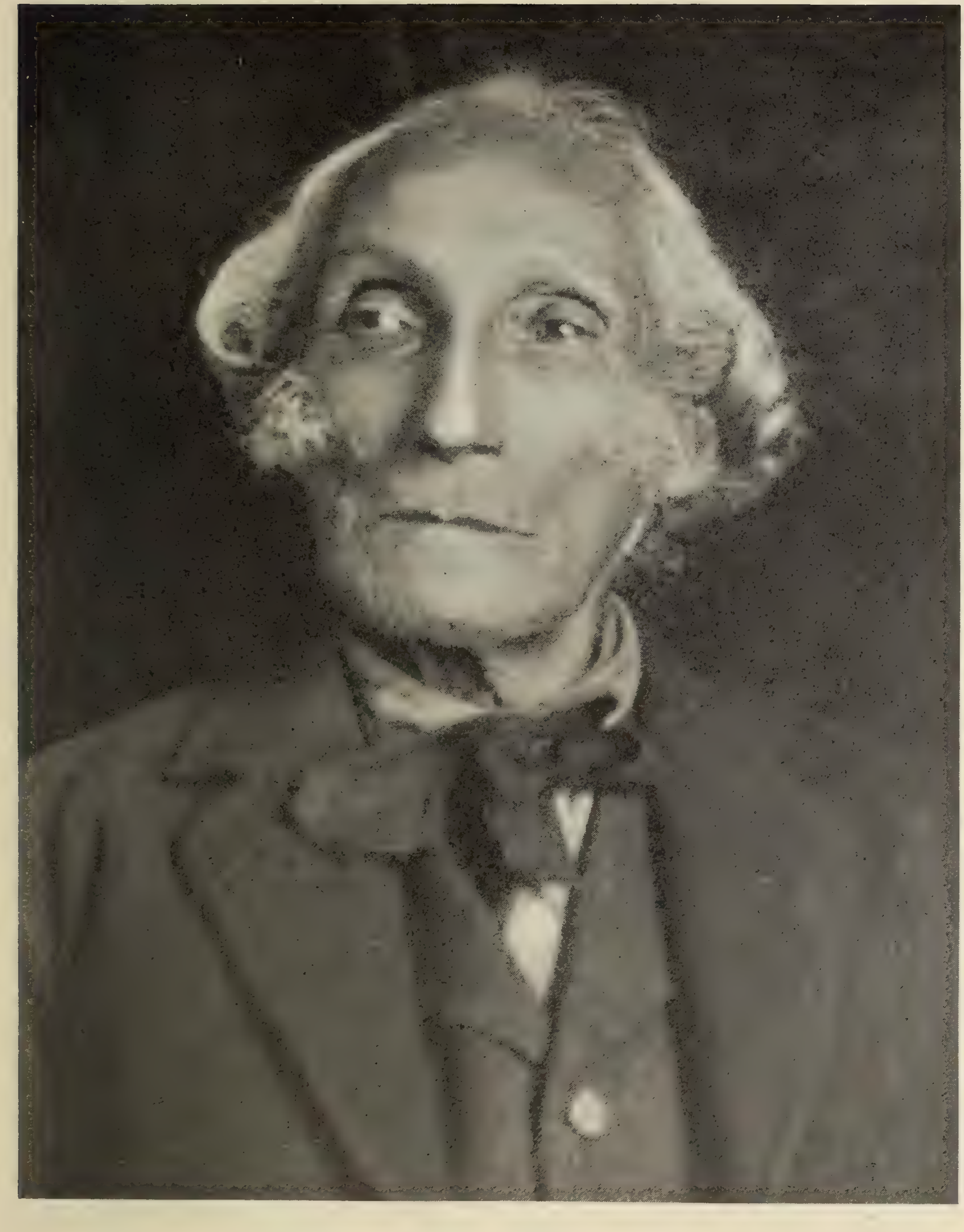

Fig. 35. Portrait of Wickam Cuffee.

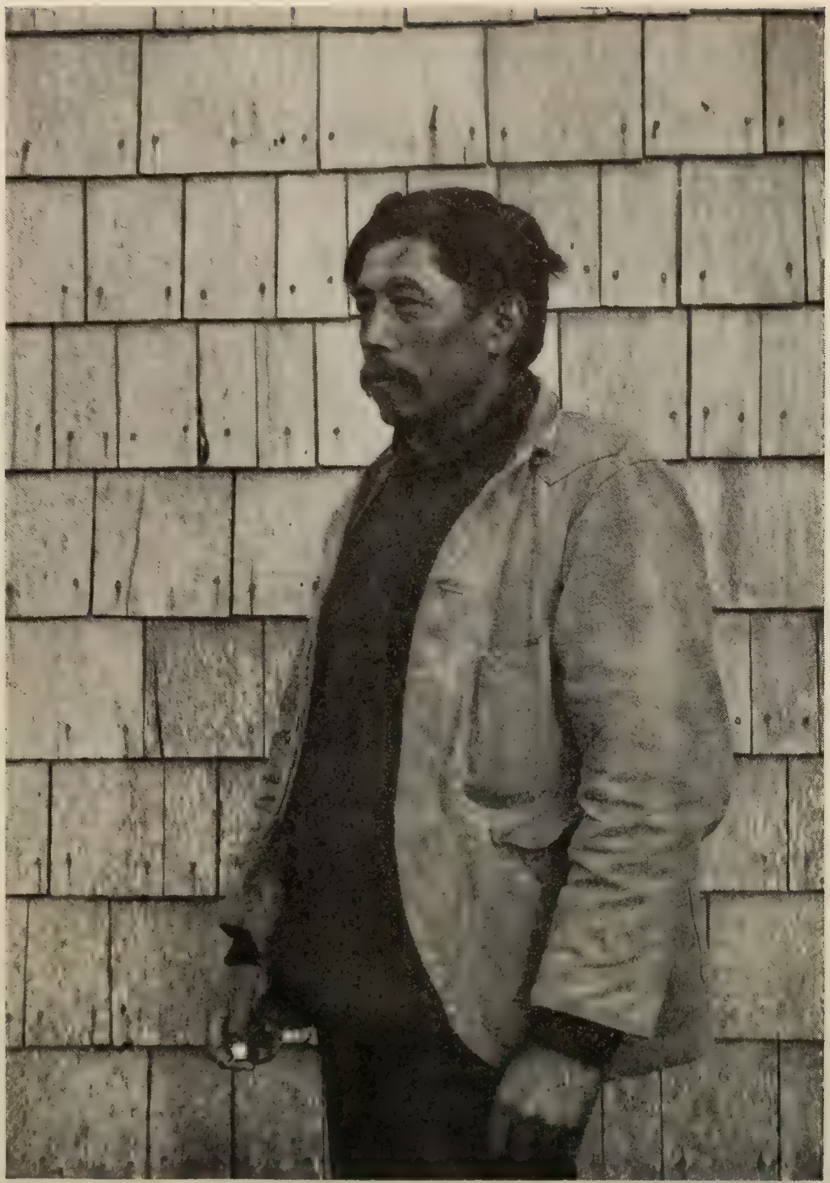

Fig. 36. Portrait of Charles S. Bunn.

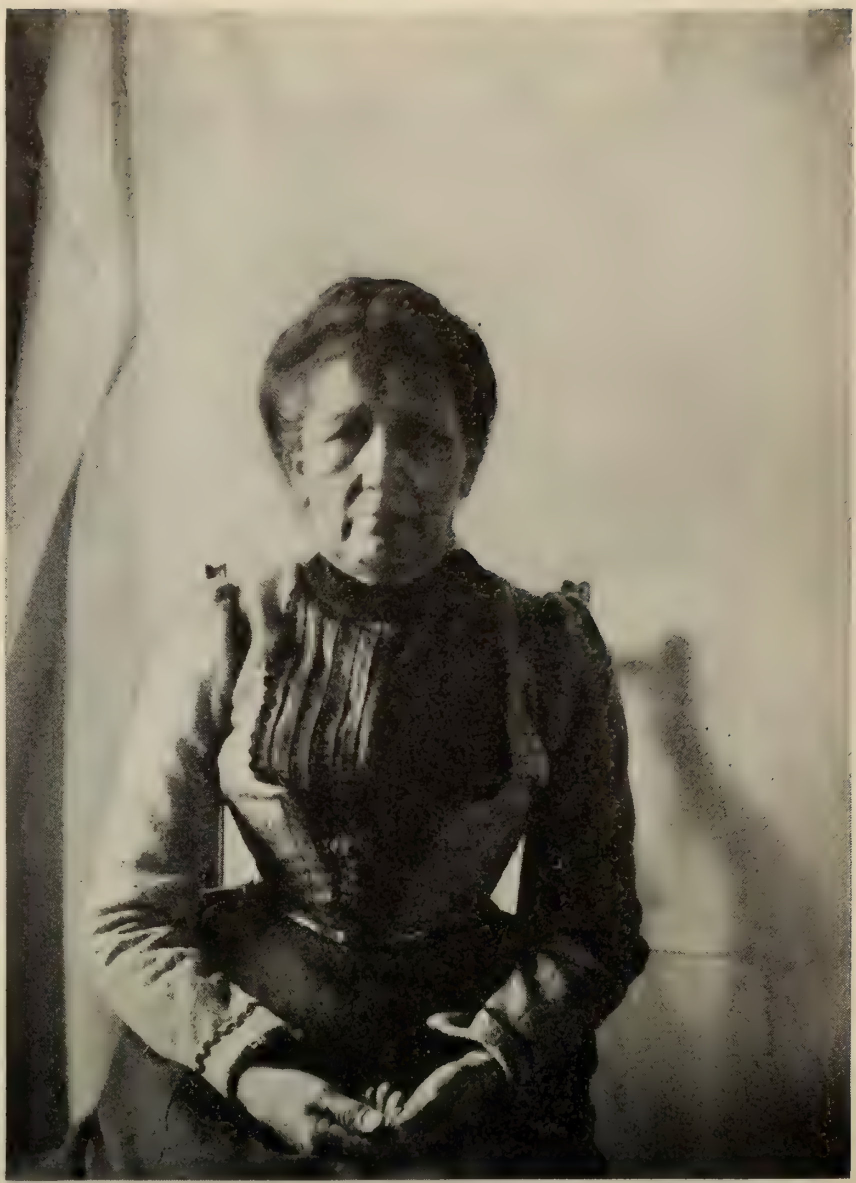

Fig. 37. Portrait of Mrs. A. E. Waters

lished. If not, we have merely another specimen showing trade with Europeans.

Fate of the Shinnecock. The Shinnecock truly sold "their birthright for a mess of pottage" in 1640 when they placed their marks as signatures on the first deed to the English settlers. From that time onward, the town records of Southampton[1] are our best source for learning what befell them. We find many early town ordinances that must have proved irritating in the extreme, for example, the one before quoted, forbidding the Indians to dig for ground nuts. We observe also that they were at first not permitted in the town at all, that no one was allowed to sell them food; and perhaps most onerous of all, that they were ordered to kill their dogs. No wonder they were sometimes rebellious, and once attacked Southampton and burned several houses, for which damage they were later compelled to pay.

On the other hand, we find that it was lawful to sell food to the sachem for his own use, but to no one else, and in another place it was made lawful to sell an Indian flour, provided it was of the coarsest quality. In 1649 it was permitted to the Indian women to come to town on shopping tours, and then the same privilege was extended to the "ancient men" to do the same, but these must first obtain "tickets." Still more considerate was an ordinance forbidding the whites to turn out their "Hoggs or piggs" on the Indians' land, that their corn be not damaged, and another in 1653 providing that "if the Indians will suitably fence one half between them and us that then ye towne will fence the other half." By 1675 the relations of the two races had so improved that many Indians were employed by the whites to go to sea for them in pursuit of whales.

Of the Shinnecock's relations with other Indians we learn of their distress on account of a threatened attack by "Naragansets" in 1653, and of their submission to Wyandance of Montauk, whom they acknowledged as "Sachem of Pawmanack or Long Island." He however was brother of their own chief, Nowedonah.

Little record was made of the Shinnecock after they ceased to be, from the settler's point of view, a menace to the colony, and took their place in its whaling and other industries. We learn from other sources[2] that many of them went to Brotherton, in Oneida County, New York, about 1789, where they joined the remnants of various New England tribes, and in 1833 moved with them to Wisconsin, where their mixed descendants may still be found.

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[1] Southampton Records, *op. cit.*

[2] "Handbook of American Indians" (*Bulletin 30, Bureau of American Ethnology*, Washington, 1907, 1910), part 1, 166; part 2, 550.

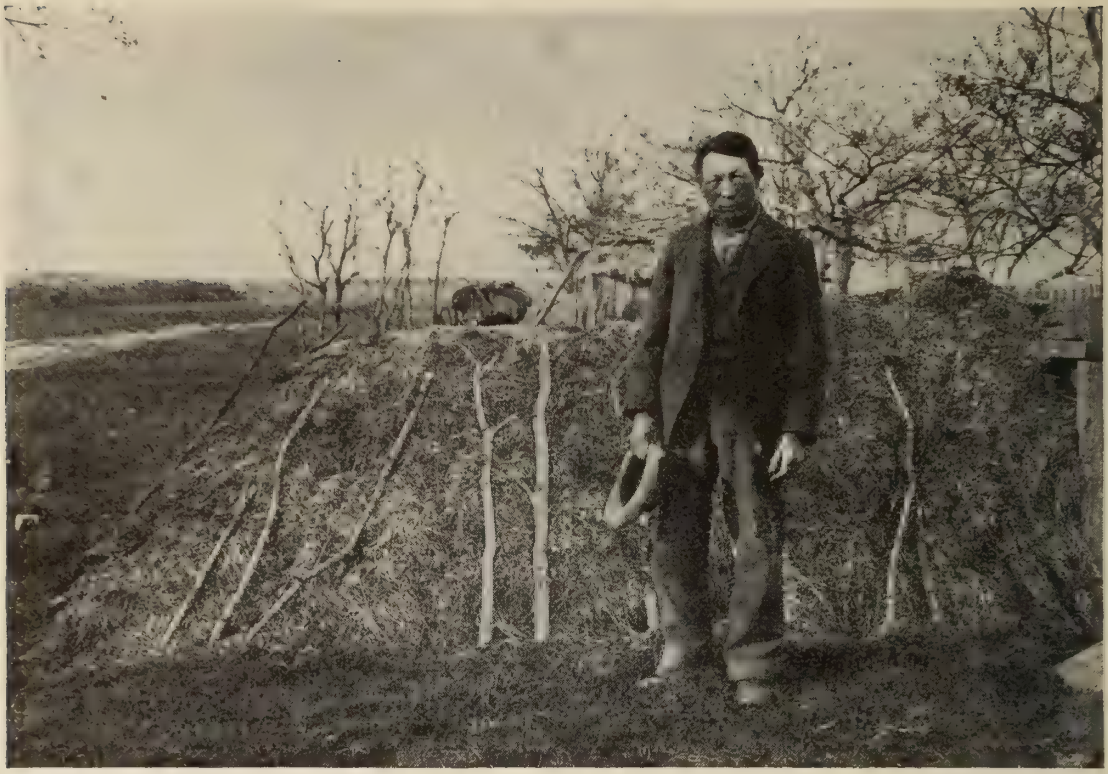

Fig. 38.

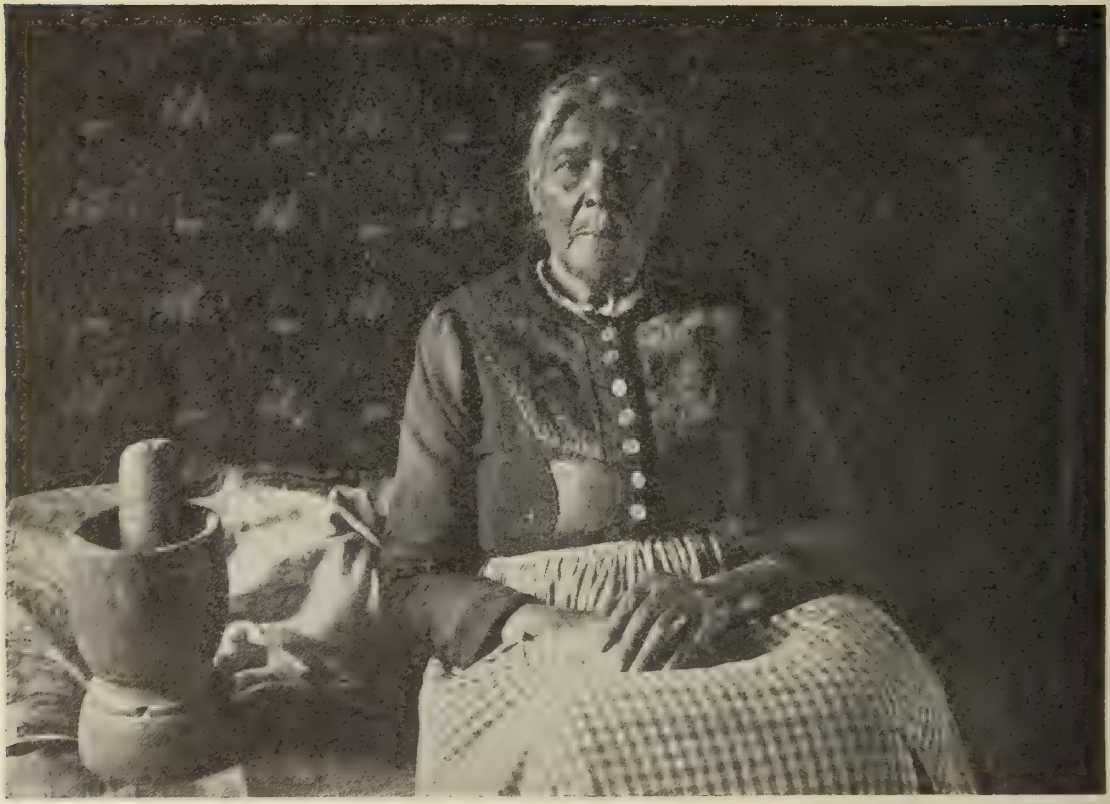

Fig. 39.

Fig. 38. Portrait of John H. Thompson.
Fig. 39. Portrait of Mary Ann Cuffee.

Some of those left behind intermarried with negroes, a phenomenon seen among several remnants of Atlantic Coast tribes and among some Muskhogean peoples, but exceedingly rare elsewhere, fortunately for the future of the Indian race. Certain it is that the African mixture has lost for the Long Island survivors the respect and support of the Iroquois tribes who now will not recognize them in any way, and will not even admit that there is any Indian blood left on Long Island.

There has been a heavy infusion of white blood too, but affairs had progressed so far that when I paid my first visit to the Shinnecock "Reservation," in 1902, the place appeared to be a negro, or rather, mulatto settlement, pure and simple. But more careful search revealed a number of individuals showing Indian characteristics. To quote my notes, written at the time:—

Some are black and woolly headed, having at the same time facial characteristics distinctly Indian. Others have the straight hair and light color of the Indian, but the flat nose, large dull eyes, and thick lips of the negro. A few of the men are typically Indian. Of these, Wickam Cuffee (Fig. 35) is the best example. He is Indian in color and feature, and claims to be full blooded, but the slight curl in his hair seems to point to some admixture. He speaks with a Yankee accent, and gladly tells all he knows of the old times. Andrew Cuffee, the blind ex-whaler, also presents many Indian characteristics, while Charles Bunn, Fig. 36, (with a slight tinge of negro) and John Thompson (Fig. 38) (part white) are good types. Very few of the young men on the reserve show Indian characteristics. A number of the women are pure or nearly pure-blooded Indian Among them are Mary Brewer, Mary Ann Cuffee (Fig. 39) and Mrs. Waters (Fig. 37). The preponderance of women over men is accounted for by the drowning of most of the Indian men when the ship *Circassian,* stranded off Easthampton, was destroyed, on December 31, 1876, by a sudden storm. Then it was that the corpses of the Shinnecock salvers, each incased in a mass of frozen sand, were found scattered along the bleak ocean beach from Amagansett to Montauk. Thus perished the flower of the tribe—the expert whalers who had sailed on many successful voyages out of Sag Harbor or New Bedford— the men whom their white neighbors still speak of as being "noble-looking, strong, and tall."

Many of the survivors, especially the younger ones, have left the reservation, and are now scattered abroad. The only Indian children seen during my entire stay were visitors from Shinnecock families settled elsewhere.[1]

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[1] Harrington, M. R., "Shinnecock Notes" (*Journal of American Folk-Lore*, vol. 16, 1903), 37–39.

That such survivors still exist and still show strong Indian characteristics without visible African admixture is proved by a photograph recently taken at Easthampton which was published in the *New York Evening Post,* March 18, 1922. Very likely the destruction of the "flower of the tribe" in 1876 left the negroid mixed-bloods in the majority in the settlement, which was so distasteful to the remaining Indian families that all who were financially able moved away.

CULTURAL AND LINGUISTIC POSITION

Our investigations, so far as they went, show that the Shinnecock were, in a general way, similar in material culture to the other tribes of Long Island and the coast of the adjoining mainland. However, they differed in some particulars from the tribes at the western tip of Long Island and elsewhere in the immediate vicinity of New York City, for which region we possess considerable data.

For instance, the Shinnecock seem to have used the dome-shaped, thatched wigwam in preference to all other types, a variety not mentioned by early travelers about New Amsterdam; also, their pottery, although similar in form to the archaic ware of western Long Island, differs from it in the more abundant use of pounded shells for tempering the clay, and in certain decorations. Moreover, the Shinnecock made little use of the grooved ax, so popular among the Rockaway and Canarsie, and used many more crude, broad, triangular, stemless, white quartz arrow points than points of other shapes and materials; while in western Long Island the triangular form is in the minority. A similar state of affairs, exists in the shell-heaps of eastern Connecticut[1] the significance of which will be seen later. Another feature in which the Shinnecock differed from the tribes about New York City was in the use of the circular stone pendant, seldom seen in the latter district.

When the writer visited Shinnecock in 1902 he found the language dead, and was able to collect only the few words given below, although it was afterward learned that there were persons, living away from the settlement, who might have furnished at least a much larger vocabulary. The list is given for what it is worth, with a few suggestive comparisons, merely with the comment that the first two words were found also among the Poosepatuck mixed-bloods on Long Island.[2]

It will be noticed that there are many more correspondences between Shinnecock and Natick and Narragansett than between Shinnecock and Delaware, Abnaki or Sauk, and that Narragansett seems nearest of all on account of the remarkably close resemblance of some of the rarer words. It is also interesting to note that good cognates in Algonkian

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[1] In the collection of Mr. Norris L. Bull of Hartford, Connecticut, may be seen rude triangular quartz arrow points, antler fish hooks, forms and decorations of pottery, and decorations on earthern pipes, practically identical in detail with those found at Shinnecock Hills. These were discovered in a shell-heap near the mouth of the Niantic River. Specimens from shell-heaps further west, near Milford, for example, do not show this close resemblance.

[2] The Natick and Narragansett words are from Trumbull, James Hammond, "Natick Dictionary" (*Bulletin 25, Bureau of American Ethnology*, Washington, 1903); the Delaware from Brinton, Daniel G. and Anthony, Albert S., "A Lenâpé-English Dictionary" (*Pennsylvania Students Series*, vol. 1, Historical Society of Pennsylvania, Philadelphia, 1888), plus one word, säpan, collected by myself; the Abnaki is from Elijah Tahomont, an Abnaki of St. Francis, Quebec; the Malecite is from Dr. Frank G. Speck; while the Sauk is from the late Dr. William Jones.

English	Shinnecock	Natick	Narragansett	Abnaki (St. Francis)	Malecite	Delaware	Sauk
turtle	matci'k				miktcik = tortoise		meci'käha
snake	skuk	askook	askùs	skuks		achgook	
man	tcais[1]	kehchis = old man	chise = old man				
woman	wi'nai[1]		wenÿgh				
woman	skwa	squaas	squàws	skwa		ochqueu	i'kwäwa
child	papús	papeissesu = little one	papoos				
sea-beach	siwáa	sée = sour		siwán = salt		schewewah = salt	
rain	kĕ'mĭo				kemi'wan		kĕmiyawĭ
house	wĭ'kam	week = his house		wĭkóm			wikĭyapĭ
corn mush	suppâ'n	saupáun = softened				sachsapan = soup sä'pan = mush	
shellfish	sĕ'tcawa		sucksawaug = clams (Pequot)				
thanks!	tabŭtni'	tabuttantam— he is thankful	taubut neanawáyean = I thank you				
greeting!	hah'cami						hau!
come quick!	mĕkwi'		muckquetu— he is swift				

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[1] The words ktcais, husband, old man; and wĭnai's, wife, old woman, occur in the Mohegan dialect spoken until recently in Connecticut; Speck, Frank G., "Notes on the Mohegan and Niantic Indians" (This series, vol. 3, 1909), 194.
"Chice" appears in the Southampton records as the name of a Shinnecock sachem.

dialects were easily found for all the Shinnecock words collected except the greeting "hah′cami."

The writer makes no claim to a knowledge of Algonkian languages and has probably overlooked important evidence, but it seems safe to state, on the basis of this brief vocabulary alone, that the Shinnecock language was more nearly related to the Southern New England group of Algonkian dialects than it was to the Lenapé (Delaware) group or to the Abnaki group, and this same conclusion has been reached independently by Speck[1] and by Tooker.[2]

Archæologically, we have the evidence of the wide triangular white quartz arrow points, before mentioned, as a favorite form, the pottery, the decoration on the earthern pipes, and the antler fish hooks, connecting the Shinnecock material culture with that of southern New England, particularily eastern Connecticut, but further investigation is needed in both regions before we can make full comparisons and be certain of Shinnecock relationship in this respect. Such comparisons would be particularly interesting in view of the fact that the Shinnecock kept their ancient culture, if not their blood, pure to the last, unmodified by the Iroquois influence that had made itself so strongly felt about the mouth of the Hudson and even in many parts of New England shortly before the arrival of the whites.

Judging from the conditions noted at Sebonac, we might conclude that wherever the Shinnecock came from, they had not been located in eastern Long Island more than a few hundred years before the coming of the whites; but we cannot state this as a fact, for other sites may be found showing longer occupation. This is another question to be settled by further explorations, which might also reveal the identity of their predecessors, whose existence was suggested by the finding of a few archaic, apparently non-Shinnecock specimens below our village layer.

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[1] Dr. Frank G. Speck wrote me in a personal letter that he believes that the Shinnecock belong linguistically to the Southern New England group, and expresses the same idea in a manuscript, *Native Tribes and Dialects of Connecticut* to be published by the Bureau of American Ethnology.

[2] The similarity of the eastern Long Island and southern New England dialects is brought out in Tooker, William Wallace, *John Eliot's First Indian Teacher and Interpreter, Cockenoe-de-Long Island,* New York, 1896).

ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

VOL. XXII, PART VI

ARCHÆOLOGY OF THE MISSOURI VALLEY,

BY

GEORGE F. WILL.

AMERICAN MUSEUM PRESS
NEW YORK
1924

ARCHÆOLOGY OF THE MISSOURI VALLEY.

By George F. Will.

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INTRODUCTION.

The purpose of this paper is to give a general view of the archæology of the Missouri Valley in northern South Dakota and in North Dakota and of the drainage on either side of the valley which is locally known as the 'Missouri slope'. Within this area a field is presented for a large amount of valuable archæological work that should be accomplished in the near future.

Up to the present the undertakings in this field have been very few. Most of them were in the nature of preliminary surveys and there has been no attempt at systematization. One of the first of these undertakings was begun about 1900 by Mr. J. V. Brower of the Minnesota Historical Society, assisted by Mr. E. R. Steinbrueck of Mandan, North Dakota. Some of the sites within the area were explored, but the work was principally confined to the collection of artifacts.

Soon after this time, the North Dakota Historical Society was organized, and Mr. Steinbrueck was engaged in archæological fieldwork in behalf of that body for several years. In the course of these years, many valuable specimens were collected, some maps were made, a large number of sites were located, and a considerable mass of notes taken. No detailed exploration of any single site was made, however, and none of the notes taken have been published.

For several years after Mr. Steinbrueck severed his connection with the North Dakota Historical Society, that organization carried on some further work. These undertakings included the mapping of some five of the old village sites, the maps being published in the society's reports; and in conducting a party of the older Indians along the river, to learn what they could tell of the old villages. No report on this last work has been printed. In recent years, the State society has become the owner of several of the more notable village sites, but up to the present no systematic excavation and study has been done.

In the summer of 1905 the Peabody Museum of Harvard University sent out an expedition which did a considerable amount of connected work upon one of the old Mandan village sites, the Burgois or Double Ditch site. The results of this work were printed.[1]

In 1911, in company with Dr. H. J. Spinden, then of the American Museum of Natural History, the writer spent a month along the Missouri, locating village sites and other points of archæological interest. The information obtained on that occasion will be embodied in the present paper, together with such observations as have been made during various trips along the Missouri and through the country back from the river, on several visits to the Fort Berthold Reservation, and such facts as have been elicited in conversations on the subject with a number of individuals.

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[1] Will, George F. and Spinden, Herbert J., "The Mandans: A Study of Their Culture, Archæology, and Language" (*Papers, Peabody Museum of American Archæology and Ethnology*, vol. 3, no. 4, Cambridge, 1906).

In the fall of 1919, with Dr. Spinden, some ten days were spent in a rather careful survey of the sites below Heart River. Several maps were made and small collections of pottery and other artifacts were taken from the various sites. New material obtained at this time is included in or appended to this paper.

The drawings are all the work of Dr. H. J. Spinden, who also assisted in much of the work involved in the preparation of this paper.

Dr. Melvin R. Gilmore of the North Dakota Historical Society and Mr. George E. Hyde of Omaha, Nebraska, have read the manuscript and assisted with advice and comment. Notes, embodying the comments of both of these men, will be found appended on many of the pages.

ARCHÆOLOGICAL FEATURES.

The objects and sites of archæological interest occurring in the upper Missouri area may be roughly divided into five classes:—

1. Boulder effigies.
2. Tipi rings.
3. Mounds, distinct from those of the village sites.
4. Miscellaneous: cairns of various sorts; commemorative marks; eagle-pits; sacred and traditional sites; various sacred natural objects; and burial sites.
5. Old village sites.

Some of these classes are but poorly represented in this region, the village sites, in point of numbers, of relative importance and interest, standing far above any of the others.

Boulder Effigies. Boulder effigies have been generally described by Thomas, who gives a number of instances of their occurrence further south. They are attributed to the Dakota, or Sioux, and one would naturally expect to find them of frequent occurrence in the trans-Missouri country, the home of this people during the last century and a half. Up to the present, however, only two boulder effigies have been noted in this region, west of the Missouri, both apparently depicting turtles.[1]

One of these was found on a low hill on the south side of the Cave Hills, in South Dakota, just south of the state line.[2]

The other effigy was found in Oliver County, North Dakota, by a party sent out by the State Historical Society. This effigy was carefully taken up and placed in the State Capitol grounds, at Bismarck, where it may now be seen. It is described in the society's reports.[3]

Tipi Rings. Tipi rings occur with considerable frequency over all of this area, sometimes large numbers together, but often only one or two in a place. There are two forms of the tipi ring—that marked by a circular depression in the sod, and the other form made up of a circle of small boulders, which are supposed to have been used for holding down the edges of the tipi. The latter is the most common, as the rings formed by cutting out the sod and banking it up against the sides of the tent are much sooner effaced.

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[1] Since the effigies in Wisconsin and eastern Iowa are generally attributed to the peoples of the Winnebago group, in which were included the Oto, Iowa, and, by some, the Mandan, all of which tribes are supposed to have migrated westward through the region in which most of the boulder effigies occur, there would seem to be less reason for supposing that these effigies were the works of the Dakota, who do not appear to have been effigy-builders in their old home on the upper Mississippi, than for assuming these works to be the outcome of an attempt on the part of the peoples of the old Winnebago group to continue during their westward migration their old custom of effigy-building, the use of boulders instead of earth in this work being the result of the less settled life they led after they began their movement toward the Missouri.—George E. Hyde.

[2] Will, George F., "Some Observations made in Northwestern South Dakota" (*American Anthropologist*, N. S., vol. 11, pp. 257-265, 1909), 262-263.

[3] See *Reports of the North Dakota Historical Society*, vol. II, 685.

It is possible that a curious group of depressions, described in a previous paper,[1] belongs to the tipi ring group. This site consists of some thirty or forty rings on a hill, the rings being from six to ten feet in diameter—rather small for tipi rings, but possibly representing an excavation for some purpose within the tipi.[2]

Mounds. The Upper Missouri valley is not rich in mounds aside from those which occur in connection with the village sites. Further to the north and east, the mounds are of more frequent occurrence. A number of mounds resembling very closely those across the border in Manitoba (attributed to the Assiniboin), occur along the Mouse River, in North Dakota.[3] Further south, the North Dakota Historical Society has located a number of similar mounds on the upper waters of James River, and mounds of a similar character have been reported on the Cheyenne River, near Valley City, North Dakota, and in the Coteau du Missouri near Streeter, North Dakota.[4]

Along the Missouri, however, the only mounds of this nature so far reported are on the banks of Apple Creek, near Bismarck, North Dakota. These have been described in a previous paper.[5] Some of these mounds recall certain of the Wisconsin mounds in size and shape.

One other mound form might be mentioned here, for, although it occurs, so far as known, only in connection with a village site, it appears to be independent of the actual village remains. The only example of this type so far investigated occurs in conjunction with an old village, considered as Mandan by the Dakota, located on the south bank of Cannonball River and not far from its mouth. This mound, designated as a sun mound by the Dakota, was opened and partially excavated by the North Dakota Historical Society in the summer of 1915. No report on the operations has been printed, but it is known that several interesting finds were made. So far as can be gathered from the rather hazy answers to questions asked of several Mandan, such mounds were frequently built near Mandan villages and had some deep religious significance not yet definitely revealed. A similar low mound was pointed out near the old Fort Berthold village site.[1]

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[1] Will, G. F., "Some New Missouri River Valley Sites in North Dakota," (*American Anthropologist,* N. S., vol. 12, 58–60, 1910), 60.

[2] The Cheyenne traditions state that the lodges their people made when they lived east of the Missouri were very small. They describe several types of lodges used at different periods, most of which appear to be merely variants of a common form. In the earlier period, they lived near a lake in a tall-grass country and made small lodges of poles covered with mats; in winter, they made large bundles of long grass and piled them up around the edge of the lodge for warmth. Later, when we may assume, they moved into the short-grass plains of eastern North Dakota, they speak of making similar small lodges, covered with skins, and as they had no tall-grass to make into bundles and pile up around the walls of the lodge in winter, the natural thing for them to have done would have been to excavate and pile up the sod around the lodge. They speak of living in 'dug-outs,' which they do not describe in detail, but the term would fit well a small lodge with the floor excavated and the sod piled up against the wall outside to give warmth. These lodges were all very small, such as could be transported by dogs.—George E. Hyde.

[3] Thomas mentions similar mounds on Red River, from Grand Forks northward, and Professor Montgomery informed him that the same type of mound is found in Benson, Ramsey, and Walsh counties, North Dakota, which would seem to form a more or less defined line of these mounds from Grand Forks to the Mouse River. See Thomas, Cyrus, "Report on the Mound Explorations of the Bureau of Ethnology" (*Twelfth Annual Report, Bureau of American Ethnology,* Washington, 1894).

[4] Will, George F., "An Unusual Group of Mounds in North Dakota" (*American Anthropologist,* N. S., vol. 23, pp. 175–179, 1921), 175.

[5] "A New Feature in the Archeology of the Missouri Valley" (*American Anthropologist,* N. S., vol. 13, 585–588, 1911).

Miscellaneous Features. Of the miscellaneous features of archæological interest there are many within this area. Cairns of rock occur frequently and are apparently of several classes. In the region west of the Missouri and extending to the Bad Lands, large rock cairns are frequently noticed on the tops of many of the highest hills or buttes. Several of these have been described in a previous paper.[2] They were probably built by the Dakota, some of whom say that they mark points whence good water can be seen.

Another type of cairn, not so frequently seen, appears to be commemorative in its nature. The only one of these definitely described occurs on the edge of the lower village site near Sanger, North Dakota. Mr. Sanger, the first settler in the vicinity, tells of visiting the village site in company with several Indians of the Fort Berthold Reservation. As they went along, each Indian picked up a small stone and when the party reached the cairn each individual carefully placed his stone on the pile. The Indians told Mr. Sanger that they did this in memory of their ancestors who formerly lived there.

Still another type of cairn occurs occasionally on the hills in the neighborhood of the old village sites. These are smaller and less conspicuous and are unquestionably the 'minaki' or individual piles of stones so frequently mentioned by the Mandan as being erected by young men at their places of vigil.[3]

Although not exactly a cairn, we will here include a most unusual object which occurs on the top and about at the center of a medium high hill of some length, about four or five miles west of the Missouri and west of the Square Buttes, in Oliver County, North Dakota. This is known locally as Ring Hill. It consists of a circular wall of stones, some 15 to

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[1] I have had some suggestions from Indian sources which seem to hint that this mound at Cannonball may have been an "astronomical observatory" by which the times of equinox and solstice were determined.—M. R. Gilmore.

[2] "Some Observations made in Northwestern South Dakota" (*American Anthropologist*, N. S., vol. 11, 257–265, 1909).

[3] The Omaha made commemorative marks at their places of vigil by denuding a circular spot of turf, which clearing they re-visited and re-cleared every year. I have seen such circular cleared marks of individuals of the Omaha kept as late as 1906.—M. R. Gilmore.

20 feet in diameter, and of a present height of about 3 to 4 feet. The interior is roughly paved with boulders. There is a similarly paved walk or approach, from the south, some 30 to 40 feet long and 3 or 4 feet wide, widening toward the ring and terminating against the wall in what may have been a rough step. There appear to be several figures traced out in boulders and leading out from the circular wall, but this point could not be definitely determined, as the top of the hill is so thickly strewn with small natural boulders. It is certainly a very unusual work, and, so far as can be determined, there is but one explanation of its purpose. This occurs in the account Alexander Henry has left us of his journey to the Cheyenne village with the Gros Ventre and Mandan. He states that a certain hill, some distance south of Fort Clark, and apparently in the same vicinity as Ring Hill, was considered very sacred by the Indians. Here the expedition halted for some hours, while all the people sang and prayed and the medicinemen went through certain ceremonies. He makes no mention of any structure on the hill. If his account is not a reference to the Ring Hill site, all that may be stated is that, so far, no information at all concerning this site has been collected.[1]

An interesting commemorative feature has come to light recently. On the level plain to the northeast of the old Fort Berthold village, and very close to it, may be seen a number of huge hoof marks, each two feet across, and formed by the complete excavation of the sod in the figure of a horse's hoof. These hoof marks form a regular trail which starts near the village and proceeds about 150 yards to a point marked by a larger excavation, then returns, on a more southerly line, for about the same distance toward the village. Inquiry among the Indians elicited the story of these curious marks.

We quote here Dr. Gilmore's account:—

> There exists a monument to the memory of a Mandan hero which has never before been described and published. The following account is from information given by several persons of the Mandan, Hidatsa and Arikara tribes. The location of the monument is near the site of "Fish-hook Village" on the north side of the Missouri River some twelve or fifteen miles east of Elbowoods.
>
> During the middle part of the 19th century the three tribes, Arikara, Hidatsa and Mandan, lived together in alliance against their common enemies. Their

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[1] Possibly a ceremonial pound for calling the buffalo. George Bent told me that when the Cheyenne were all on foot in early times they often had difficulty in getting near the buffalo, and there were medicinemen whose special duty it was to call the buffalo near the camp by means of ceremonies. He believed they built a ceremonial buffalo pound, with wings or walks extending out from the enclosure. These pounds were not for actual use, but for ceremonial purposes only.

Dr. A. J. Comfort describes a hill on the road between Fort Wadsworth and Fort Stevenson, with sides paved with buffalo leg bones; from this central paved area walks or paths formed of similar leg bones led out for several hundred feet in different directions. ["Mounds near Fort Wadsworth, Dakota Territory" (*Smithsonian Report for 1871*, 389–402, Washington, 1873), 398.] George Bent thought this arrangement of buffalo leg bones might be one of the old ceremonial figures, intended to represent a pound, and used by the medicinemen in attracting the herds.—George E. Hyde.

chief enemies were the Dakota. So these three tribes built their three villages adjoining, making one compound village of three wards. The village lay upon a well-drained terrace of the Missouri River, while their farms were laid out in the fertile alluvial "bottom" along the river both above and below the village. To the north of the village site lies a range of hills.

The enemy many times made raids upon the village. They would approach under cover of the hills to the north and then steal close upon the village through the course of a ravine which skirted the northeast and north sides of the village.

About sixty-six years ago such an attack was made by a war party of Dakota. Of the defenders of the village, two young Mandans, brothers, named Lefthand and Redleaf, had been dismounted and their retreat cut off by the enemy. A brother of these two, Whitecrow by name, saw the danger of Lefthand and Redleaf and rode out to their assistance. Lefthand was killed and Redleaf was defending the body from a Dakota who was trying to take the scalp. Redleaf shot at the Dakota and missed him, the bullet going over the enemy's head and striking into the ground beyond him, the enemy being crouched low at the time of the shot. Whitecrow rode in a circuit beyond these combatants and held off the attacking party of the enemy. He killed the Dakota who was engaged in combat with his brother Redleaf. Then Whitecrow picked up Redleaf upon the horse with himself and carried him safely back to the village.

After the enemy had been driven away the Mandans went out and marked the course in which Whitecrow had ridden to his brother's rescue, the spot where Lefthand had been killed, the spot where Redleaf had made his stand, the spot where the Dakota was killed, and the spot where Redleaf's bullet, fired at the Dakota, had struck into the ground. The method used for marking these places was by removal of the sod, leaving holes in the ground. To mark the course of Whitecrow's horse the sod was removed in horsetrack shaped sections consecutively from the point of advance from the village round the place of combat and returning to the village. The horsetrack marks were made about two feet in diameter. All these marks commemorating the entire action, which took place about the year 1853 are still plainly evident, being renewed whenever they tend to become obliterated by weathering and by advancing vegetation. March 26, 1919.

The making of these commemorative marks in honor of this man had a ridiculous sequel. On a drive with an Indian along the old trail, from the south side of the Missouri near Elbowoods to Hebron, North Dakota, about ten miles south of the river, my attention was directed to a pile of stones on a low knoll, not more than forty yards from the road. On closer examination a line of stones, spaced about three feet apart, was seen, leading up to the heap of stones. This seemed to bear the ear-marks of an interesting archæological find. Then came the story.

It seems that the hero of the episode at the Fort Berthold village had a brother of less renown than himself. Many years ago, as this man was traveling along the trail, he observed an antelope at the point now marked by the pile of stones. The animal was lying down; the range was ridiculously short. The man stopped, seized his gun, and fired; but the antelope continued to recline calmly on his knoll. Several more shots were fired with the same result; and then, to the Indian's chagrin, the antelope, perhaps finding the vicinity too noisy for a sound nap, arose and walked away. In some way this affair became known, and the young men of the reservation carefully placed the stones where they now are to be seen, as commemorative marks, in imitation of the hoof marks made in honor of the more famous brother. Often did the butt of this bit of Indian humor remove and scatter the stones; but just as often were they carefully replaced by the young men, and now they will probably remain undisturbed for many years.

Widespread throughout the region—along the bluffs of the Missouri and its tributaries, in the Bad Lands and among the scattered hills and buttes—are old eagle pits, wherein the eagle hunters concealed themselves under a covering screen of sticks and sod upon which was laid a bait of meat. Here the hunters seized the eagles by the legs, as they came to feed, and plucked their highly esteemed tail feathers. Usually a litter of small sticks in the bottom of the pit marks the remains of the covering screen.

For the reason that all of the Siouan tribes of this region used the tree or scaffold method of burial, there are few graves to be found, except in the immediate vicinity of old Arikara village sites. This people always buried their dead in the ground.

One unusual burial has, however, been observed. This has been described in a previous paper,[1] and occurs near the unusual mounds above mentioned, on a point of a high bluff overlooking Apple Creek from the south. Apparently a number of individuals were here buried in a very small area.

Another unusual feature in the region are the carvings on the walls of the entrance chamber to the large cave in Cave Hills, South Dakota. These carvings are very numerous and rather elaborate; but as they are done in very soft sandstone many of them have disappeared. They are described with illustrations in a previous paper.[2] As the Cave Hills country was frequented as a hunting ground by both the Village Indians and the Dakota, it is difficult to say whether these petroglyphs should be ascribed to one or the other peoples, or to some earlier dwellers in this region.

Some six miles south of Elbowoods on the Fort Berthold Reservation, and on the south side of the Missouri, is a fertile bottom overlooked by a narrow bench, which holds an important place in Mandan and Hidatsa tradition. This place is the original seat of the Grandmother or Old Woman Who Never Dies. Along the edge of the bench is a narrow slough, running into the Missouri, which is rendered into English in the old stories as the "Short Missouri." On the low bottomland the Grandmother is said to have had her vast cornfield in which her laborers, the deer and blackbirds, carried on the work. On the edge of the bench, and at present in the dooryard of James Holding-eagle, is a perfect earthlodge circle some sixty feet in diameter. There are no other lodge rings anywhere in the vicinity, and this one is believed by all the older people to be the remains of the Grandmother's solitary abode.

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[1] "A New Feature in the Archeology of the Missouri Valley," (*American Anthropologist*, N. S., vol. 13, 585–588, 1911), 587.

[2] "Some Observations made in Northwestern South Dakota," (*American Anthropologist*, N. S., vol. 2, 257–265, 1909).

Natural Objects of Veneration. This completes the list of archæological miscellanies in the region, so far as they have been observed. There is a large class, not exactly archæological, but bearing some relation to archæology, of various natural objects which are much venerated and which play an important part in the traditions of the region. First in this class come several sacred stones or rocks.

Best known of these, perhaps, is the Standing Rock, for which Standing Rock Reservation is named. This appears to have been an Arikara 'medicine' long before the Dakota came to the Missouri. In 1804 it was located on the east side of the river, on the upper course of Spring Creek. This rock has been mounted on a permanent base and now stands on a hill near Fort Yates, North Dakota.

On the Fort Berthold Reservation there are at present three sacred rocks which have come under observation. One of these stands near the door of the Arikara earthlodge dance house on Beaver Creek. It is kept wrapped in cloth with only a small portion exposed to the view. This rock has the appearance of an ordinary granite boulder. Arikara tradition says that it represents the Standing Rock stone. A second and very similar stone lies in the dooryard of James Holding-eagle, near the Grandmother's lodge. It was, however, only recently moved there from a point not very far away. This stone, while possessing some interest to the local tribes, is said to be especially esteemed by the Crow. Whenever they visit the Reservation they take occasion to see the stone, usually leaving with it a present of cloth, which they wrap around it, or of coin, which they place under it. This stone is also said to have fallen from the skies although it, too, appears to be an ordinary granite boulder.

Recent inquiries have elicited the information that this stone is connected with the well-known story of the girl who married the man from the sky where she went to live with him. She later attempted to return to the earth, and her husband, discovering her hanging from the cord of buffalo hide, cast down a stone which crushed her to earth. The stone we are describing is declared to be the one which killed the woman.

The third rock on this Reservation is rather different in its nature. It was not visited, but its location was given as about seven miles northwest of the Grandmother's lodge circle. It is on a high ridge and is described as a large rock embedded in the side of the hill, with a large flat surface exposed. According to the story, the Grandmother frequently sent visiting Hidatsa to this stone, on which occasions there were always prophetic pictures visible upon it. There are a number of tales detailing various prophecies made by this rock, and it is believed that pictures may even yet be seen on its surface at times.

Of other named and esteemed natural objects in the region there are, of course, many, each having its own story. Only a few of these have as yet been investigated, however. In the vicinity of the Grandmother's lodge, so full of objects important in tradition, is also Red Butte. This is within a half mile of the lodge ring, toward the south, and is known as the Snakes' House. Several stories are told of the visits of the culture-heroes to the interior of the Snakes' House and of their struggles with the dwellers therein. It is an interesting fact that this butte really is a den of rattlesnakes, two white men having killed well over one hundred snakes there in one afternoon in 1914.

The big cave in Cave Hills is, of course, held in much veneration, as the elaborate carvings about its entrance show. Still another traditionally important orifice is the hole located in the top of Kill Deer Mountain. This is a round opening in the cap rock, some three or four feet across, leading down into a fissure of unknown depth. According to the Fort Berthold Indians this is the opening from which the first buffalo originally emerged upon the surface of the earth.

East of the Missouri, some thirty or forty miles distant from it stands Dog Den Butte, one of the most noticeable and prominent elevations of the Coteau du Missouri in North Dakota. This butte plays an important part in many stories, and is prominent in one of the oldest of the Mandan-Hidatsa traditions as the place in which Coyote Chief shut up all of the game animals of the world, in an attempt to starve the people.

Besides these natural objects and embellished natural objects noted above, there are many other similar things scattered over the state of North Dakota which have never been noted or described. There are stories of several carved boulders in different parts of the state. There are hills and lakes with interesting traditions attached to them, some of which go by names which can be traced back to these old stories of which the present generation knows nothing. A striking case of the corruption and final loss of old names occurs in connection with a creek on the Fort Berthold Reservation. This creek now has two names—Rising Water, and, more commonly, Lucky Mound or Lucky Mountain Creek. Examination of the old accounts and old maps shows the name, L'eau qui Monte, as being the original translation by the French of the Indian name, hence Lucky Mound, of which no one in the locality can at present offer any explanation.

There are traditions connected with many other natural features, from Elbowoods down to Grand River, and there are specially named natural objects, such as the butte, into which Black-tail Deer, in one of the tales, disappeared. The butte is just south of Little Heart Creek. There is also the Holy Hill of the Mandan, near Cannonball, the hill on Knife River, where the little people live, and many others of which we have not even heard.

Enough has been presented in the preceding pages to show that a large amount of material lies in this region for further investigation and study. It is to be hoped that this work will soon be taken up.

Village Sites. Let us turn now to the largest and perhaps most interesting class of archæological material of the region—the old earthlodge village sites, a field, which if properly and systematically worked would yield us almost complete data on the early culture and history of some six or seven tribes of the upper Missouri Valley.

Village sites are, of course, scattered along the Missouri from the mouth up, and they extend along its course to the mouth of the Yellowstone, frequently the territory of one tribe overlapping that of another. The section, however, which it is proposed to discuss here, is practically bounded on the south by Grand River, in South Dakota, although some mention may be made of sites farther down.

The tribes which have been directly concerned with the building of earthlodge villages, within the bounds above mentioned are: the Arikara, the Cheyenne, the Mandan, the Hidatsa, and the Amahami.

The Arikara, of the Caddoan stock, and at one time a part of the Skidi Pawnee, quarreled with that people and separated from them very early in the eighteenth century.[1] According to their traditions they were at that time a very powerful tribe. After leaving the Skidi they established themselves on the Missouri and gradually moved northward along that stream. Old Arikara sites are located near the mouth of Bad River, where they were visited by the younger Vérendrye in 1743[2], near the mouth of Cheyenne River, where Trudeau[3] found them in 1795, about the mouth of Moreau River, and above the mouth of Grand River, where they were visited by Lewis and Clark in 1804.

The Arikara villages near Bad River appear to have been abandoned about 1770 because of the hostility of the Dakota, who at that period began to press to the Missouri from the head of the Minnesota River. Personally, I believe this Teton movement to the Missouri was the direct outcome of the procuring of arms and ammunition from the British traders. This trade began among the Sioux about 1765, and a few years after that date we find the Sioux terrorizing the Village tribes on the Missouri.

The sites near Bad River that are probably Arikara are, as far as I can learn, the following:—

1. "Ancient Indian Village," on the west bank of the Missouri, sixteen miles below Bad River and one mile below East Medicine Knoll Creek. This site is so marked on Missouri River Commission map, Sheet XL.

2. "Ancient Indian Village," marked on the same sheet one mile above East Medicine Knoll Creek on west bank of the Missouri.

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[1] Perhaps early in the seventeenth century, for the Omaha and Ponca state that when they reached the Missouri, certainly long before the year 1700, the Arikara were already there.

There does not appear to be any trace of early Arikara residence in northern Nebraska. Lewis and Clark mention a "Pania" village site on the Niobrara River, and some have supposed this to be an Arikara village, but this is clearly an error, for which Evans is responsible. On Evans' map the modern Ponca River is set down as Pania River and the Ponca village is set down as Pania village; hence Pania Island in the river near this village and Pania House, sometimes called Pawnee House, on the east bank near Randall, South Dakota.

The Arikara are spoken of by La Harpe, 1719, who places them on the Missouri 120 leagues south southeast from "seven famous villages," which may have been the Mandan villages of the old Heart River group. The distance given, 120 leagues (300 miles) would, counting from Heart River, place the Arikara some 20 miles below Bad River, where they probably were located at that time. La Harpe also speaks of the Arikara relations with the *Padouca*, a people whose southern bands lived in western Kansas and Nebraska at that period, and whose northern bands, known as the Gens du Serpent, were in contact with the Arikara and other tribes on the upper Missouri.

Renaudière, 1723, places the Arikara ten leagues above the Omaha, with whom they were allied, but his location of the Omaha is not definite enough to enable us to locate the Arikara villages.

At this early period the Arikara, like their kinsmen, the Pawnee, were captured and sold into slavery by the tribes on the Mississippi as well as those in the plains. Thus Charlevoix had a Pani-Ricara slave, evidently purchased on the Mississippi, and Mallet in 1739 found Arikara slaves among the Padouca and *Ietan* on the New Mexican frontier. [De la Harpe, Bénard, *Relation du Voyage de Bénard de la Harpe. Découverte faite par lui de plusieurs Nations situées a l'ouest*, in Margry, Pierre, *Découvertes et Etablissements des Francaise dans l'ouest et dans le sud de l'Amerique Septentrionale* (1614–1754). *Sixième Partie. Exploration des Affluents du Mississippi et découverte des Montagnes Rocheuses* (1679–1754), Paris, 1886, 292–293. See also Mallet, in Margry, *ibid.*, and Charlevoix, P. F., *History and General Description of New France*, vols. 1–6. New York, 1866–1872.—George E. Hyde.

[2] Margry, *ibid.*, vol. 6, 598–611.

[3] *Collections, Missouri Historical Society*, vol. 4, no. 1, 9.

3. "Indian Village" marked on the same sheet on west bank of Missouri four miles above Bad River. This is evidently the site mentioned by Robinson, who states the sites has a double ditch.[1]

4. "Site of Indian Village and Fort" marked on Sheet XLI on west bank of Missouri seven miles above Bad River.

There must have been other villages in this group, and some of them are probably mentioned in the South Dakota Historical Collections.

The Arikara villages near Cheyenne River appear to have been built after the Bad River group of villages was abandoned. According to Lewis and Clark there were five villages in the Cheyenne River group, but this number does not, perhaps, include all of the sites. The sites in this group as far as I have seen them recorded are:—

1. "Site of Indian Village" on Sheet XLI, on west bank of the Missouri nineteen and one-half miles above Bad River. This is clearly the first Arikara site noted by Lewis and Clark, the one on "No Timber Creek," modern Chantier Creek. On returning down the river in 1806 Lewis and Clark speak of this site as "a large village on each side." This may mean there were two villages at this place. They state this village was abandoned in 1799. This is evidently the site that Brackenridge[2] and Bradbury[3] describe in some detail.

2. "Site of Indian Village" marked on Sheet XLII, on the west bank of the Missouri near the lower point of Cheyenne Island, about five miles below Cheyenne River. This site was noted by Lewis and Clark and is evidently the first Arikara village of Trudeau, 1795.

3. The second village occupied in Trudeau's time, 100 paces above the first village.

4. Village on the south bank of Cheyenne River, at its mouth, which is marked on Sheet XLII as "Site of Indian Village and Fort." This site seems to have been noted by Brackenridge, and is marked on Lewis and Clark's map, No. 7 in Atlas.

5. "Site of Indian Village" marked on Sheet XLII on west bank of Missouri thirteen miles above Sheyenne River. Whether this was one of the group of Arikara villages or not we do not know, as the site is not mentioned by any of the early travelers.

The Arikara appear to have abandoned the last two of these villages in 1795, after Trudeau left them, for Evans in 1796 found the Arikara living ten leagues below the Mandan and Hidatsa. About a year later the Arikara joined the Sioux in an attack on the Mandan and Hidatsa and then moved down the Missouri. It was evidently at this time they built the villages above Grand River, though they appear to have reoccupied some of the older villages below, as Lewis and Clark state the Chantier Creek village was occupied in 1799, and the small village on La hoo catt Island was occupied in 1797.

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[1] Robinson says this site is described in the *Collections, South Dakota Historical Society*, vol. 3, 543.

[2] Thwaites, Reuben Gold, *Early Western Travels*, 1748–1846. *A Series of Annotated Reprints of some of the best and rarest contemporary volumes of travel, descriptive of the Aborigines, and Social and Economic conditions in the Middle and Far West, during the Period of Early American Settlement*, vol. 6, Cleveland, 1914, 107.

[3] Thwaites, *ibid.*, vol. 5, 126.

In 1804 the Arikara had three villages here, above Oak Creek.[1] The lower village in this group was abandoned soon after Lewis and Clark returned down the Missouri in 1806; but the Arikara continued to occupy the two upper villages until they were attacked by Colonel Leavenworth's forces in 1823. Aided by the Dakota, Leavenworth drove the Arikara out and practically destroyed the villages. Part of the Arikara went up and joined the Mandan, while the great part of the tribe moved south and joined their kinsmen, the Skidi Pawnee, near the upper Platte. Among the Skidi they were not welcome, because of their troubles with the whites and their raids on the Cheyenne, with whom the Skidi were at that time attempting to make peace, so the Arikara left the Skidi and established themselves near the forks of the Platte. From this point they fled in 1835 on learning that a body of United States dragoons was marching in their direction. A few years later they returned north, arriving near the Mandan village in 1838, soon after that tribe had been almost destroyed by smallpox. The Arikara now possessed themselves of the larger part of the Fort Clark Mandan village, where they remained for nearly thirty years. Leaving here about 1860, they established themselves about opposite the Fort Berthold village of Mandan and Hidatsa, and a year or so later they crossed the river and united their village with the former one.

The vanguard of the Cheyenne came into North Dakota late in the seventeenth century and built a village in the great bend of Sheyenne River. Part of the tribe remained behind in Minnesota, and they were, perhaps, the people who built the village referred to by Comfort, near the head of Minnesota River in the northeast corner of South Dakota. The Cheyenne themselves have no detailed account of their migration to the Missouri; but according to Dakota tradition, which appears to be, in the main, trustworthy, it was the Cheyenne band that had lingered behind in Minnesota that first reached the Missouri. These people first built a village on the Coteau du Missouri, near the present town of Kulm, whence, after a short sojourn, they moved to the Missouri and built a village on Porcupine Creek, between the Arikara and the Mandan, about 1740. The other band of Cheyenne was driven from their village on Sheyenne River, and moving across the Missouri, built a village on the site of the present Farm School, below Fort Yates. During the eighteenth century, the Cheyenne, according to the Dakota, built at least four important villages on the Missouri: one near the mouth of the Little Cheyenne, one at the Farm School, one between Fort Yates and Porcupine Creek, and one on Porcupine Creek. All of these villages appear to have been abandoned by 1780, the tribe moving out toward the Black Hills and adopting the life of roving hunters. Part of the people, however, continued to plant corn down to about the year 1800 and, according to the Dakota, the Cheyenne maintained a settlement on Grand River, to which they returned after their hunts. Here they had their fields and a number of small earthlodges.

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[1] The villages above Grand River must have been built after the Arikara abandoned their villages near Hensler, North Dakota, allied themselves with the Sioux and attacked the Mandan and Hidatsa. These events occurred in 1796 and 1797, and the Arikara abandoned the Hensler villages in 1799, according to Clark.

The Mandan are perhaps the oldest dwellers in the Missouri Valley in this region. According to their tradition, they reached the Missouri at the mouth of White River, in South Dakota, at a very early date, led by a great culture-hero chief, Good-Furred-Robe. Thence they moved up to Bad River, made a journey west to the mountains, and came back down White River, or Sheyenne River. Here part of the tribe remained, the rest moving up to Bad River again. This division gradually lost touch with the other one, which finally disappeared.[1] On Bad River the Mandan had their fields and were living prosperously when they were attacked by their first enemies, the Grass People.[2] After the first battle, the Mandan chief introduced several of the war ceremonies and societies. From Bad River the tribe gradually moved upstream, with long stops at different points, finally reaching Heart River,[1] where they built many villages and dwelt for a very long time. At Heart River the Hidatsa came to them, and here they were first visited by the whites: Vérendrye[2] and his party, 1738–1739.

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[1] This reminds one very strongly of the Omaha-Ponca tradition. These two tribes (then one people) reached the Missouri betwen the Niobrara and White River at an early date. They moved up above White River and there crossed the Missouri. The Ponca moved out to the mountains and remained for some time. then rejoined the Omaha at the mouth of White River. As the soil at this point was not very good, the people now moved down the west bank of the Missouri into Nebraska. All of this occurred before 1700, apparently, as the French sources show that the Omaha were in Nebraska soon after that date. During this earliest period the Omaha-Ponca people are said to have had the common name Honga.—George E. Hyde.

[2] Grass People, or Vegetation, or Herbage People. According to a Mandan story the Mandan found enemies in their land first at Bad River. Here they found a woman killed by some enemy while working in her field. They prepared and went out to find and fight the enemy, defeating them, and from the conflict, the creek was choked with corpses, hence, Bad River. The survivors of the enemy turned themselves into grass or other herbage, and so made off and escaped. So the Mandan called them Grass People or Herbage People. They afterwards came to know them to be the people who call themselves Dakota.—M. R. Gilmore.

It seems well to go into the movement of the Mandan rather carefully, taking into account the various items of evidence of different kinds which we have, comparing these items with such information as we have from the Indians themselves, and with the known existing sites. The written evidence is contained in the accounts of their various early visitors, more especially Alexander Henry, Lewis and Clark, and Maximilian. In comparison of these accounts, however, much caution should be used in treating the distances given by the various travelers. The land along the Missouri River is subject practically to a double set of measurements which vary widely in many cases, depending upon whether the reference is made to river channel distances or to straight line distances across the river bottomland. Thus, the present distance from Hensler to Mandan Lake is about five miles by road while by river it is nearly twice that far. From this it will be seen that distances as stated by travelers may be correct from one viewpoint, and absolutely incorrect from another.

Let us now try to trace the more or less historical epoch of the Mandan. In 1773, according to Mackintosh,[3] they were still flourishing in the Heart River region, having nine to thirteen villages on the two sides of the Missouri with many thousands of warriors. Soon after 1780, however, they were severely attacked by the smallpox. The Dakota or Sioux, discovering the plight of their neighbors, then attacked them and destroyed two large villages on the east side, the largest being known as Ruptare. From this great village two men, one known as Fire and the

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[1] I have just found what appears to be the earliest reference to the Mandan villages in the Heart River group. La Harpe in 1719 visited the village of some Caddoan Indians on the Canadian River in Oklahoma and was given the following information:—

"That the Padoucas were a numerous nation whose villages extended very far toward the N. and N. N. W.; that the Spaniards were not allied [i.e., in contact] with all this nation, and that when they went to trade with some distant village on the side of the Aricaras ("*village escarte du coste des Aricaras*), they were often attacked by the Panis, enemies of the Padoucas. . . That there were seven famous villages on the N.N.W. side of the Aricaras at a distance of 120 leagues, with whom they are allies. I believe the Aricaras were part of the 45 Panis villages." (Margry, *ibid.*, vol. 6, 292–93.)

A French league is about 2½ miles; 120 leagues equal about 300 miles. Bad River to Heart River according to Lewis and Clark's distances is 267 miles.

Vérendrye says the Mandan had six large fortified villages; Bougainville [*Mémoire sur la Nouvelle France* (1757), quoted in a footnote in Maximilian, Prince of Wied, *Travels in the Interior of North America*, Thwaites edition, vol. 2, 235] says there were seven. Lewis and Clark usually say six and then add nine in italics:

Big White told Clark in 1806 that there were seven villages when he was born in the Fort Lincoln Village about 1757 (*Original Journals of the Lewis and Clark Expedition*, New York, 1904, vol. 5, 346).—George E. Hyde.

[2] *Report on the Canadian Archives*, note A, no. 1.

[3] Quoted in Schoolcraft, H. R., *History, Condition and Prospects of the Indian Tribes of the United States; collected and prepared under the direction of the Bureau of Indian Affairs*, vol. 3, Philadelphia, 1854 (253).

the other, Belt, were the only survivors. The story of these two old men is still clear in the memory of James Holding-eagle who received it from his grandfather Moves-slowly, Mandan corn priest. Moves-slowly had it direct from the men themselves in his youth.

The surviving people on the east side now determined to move up river, and they established a village on the east side a short distance above Painted Woods and nearly opposite Sanger. Joseph Packineau[1] of Elbowoods recently gave the information that this site is still in existence.

Prior to this first move of the east side Mandan the Arikara had apparently been routed by the Sioux, and had gone up river and established themselves in two villages near the present Hensler, one to the southeast, the Greenshields site, and one about one mile north of Hensler on the bench.

The west side Mandan, now also diminished by smallpox, then decided to move and probably established the several villages in the vicinity of Sanger although one of these was at some period inhabited by the small Amahami tribe. Shortly after this, the east side people seem to have been again attacked and defeated by the Sioux. A vague tradition says that they then built the Scorched Arrow village at the mouth of Turtle Creek just below the present Washburn. There is, however, also a tradition to the effect that this was an Arikara village. No site can now be found at this point. If the Mandan stopped here at all the stay was short, and they soon moved up to Elm Point, just above the little area of Bad Lands and almost directly east across the river from the present Stanton, as well as about three miles diagonally across the river from the later location of Fort Clark. Here they built two villages, one about a mile above the other. These are both described by Alexander Henry,[2] although the upper one had been very recently abandoned at that time. These two villages were occupied until 1803 when the upper village coalesced with the lower one. Henry, as already mentioned, found them thus in 1804, and so did Lewis and Clark.[3] Recent information obtained, shows that both these sites are still plainly marked and they will be visited in the near future. Shortly after 1805 the Ruptare or *east* side people moved over to the *south* side, and established still another

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[1] Packineau appears to be a corruption of the French name Patineaude, his French ancestor.—M. R. Gilmore.

[2] Henry, Alexander, and Thompson, David. *New Light on the Early History of the Great Northwest.* Edited by Elliott Coues. New York, 1897. (vol. 1, n. 323).

[3] Lewis, Meriwether and Clark, William. *History of the Expedition under the command of Captains Lewis and Clark to the Sources of the Missouri thence across the Rocky Mountains and down the Columbia River to the Pacific Ocean performed during the years 1804–1806.* 4 vols. Edited by Elliot Coues. New York, 1893. (Vol. 1, 179 seq.).

Ruptare village some three miles above the Fort Clark site, near the present Deapolis. Here they still dwelt when visited by Maximilian and Catlin, and until the great smallpox plague of 1838 almost destroyed the tribe.

Meantime the west side people had also gradually continued their progress northward. From the vicinity of Sanger they moved up to a point a short distance below the Arikara villages and built a village, now identified as the Bagnall site. Either at or just prior to this time the Arikara had gone back down river. Several years later, in 1796 the Arikara returned to the old villages here for a brief sojourn, and found that the Mandan had moved on about three or four miles above them. This, according to direct line measurements, placed the Mandan in the vicinity of Mandan Lake where we have two sites now, close together on the east bank of the lake, and traditions of a large winter village in the timbered bottom below.

Apparently some trouble was experienced with both the Arikara and the Dakota while at Mandan Lake, and as the location did not lend itself well to defense another move was soon made. On this occasion two villages were again built, one probably at the present *Fort Clark Station*,[1] and another one on a promontory overlooking the river, about a mile or a little more above. This latter site is the historic Old Fort Clark Mandan village. From archæological evidence and tradition it is clear that the lower site here existed as a village for only a very short time, and was soon merged into the larger one. The old Fort Clark village like Ruptare some three miles above it also survived till the smallpox of 1838. After this, the few survivors joined the Hidatsa, but some of the women remained in the old village with the Arikara. When the Hidatsa finally moved to Fort Berthold the remaining Mandan accompanied them and settled there with them in the last village built.

The Hidatsa, of kindred stock with the Mandan, but widely divergent in language and culture, claim to have come from under the ground, reaching the surface of the earth in the vicinity of Devil's Lake. The Crow were at that time a part of the Hidatsa. After emerging they built a large village near the lake and lived there for many years. At length four of their hunters, journeying westward, came upon the Missouri and saw the villages of the Mandan on the opposite bank. They talked with the Mandan, received a present of corn, and declared that they would return with their people in four days. This occurred near the mouth of Heart River.[1] The four days lengthened into four years, and at the end of that time, a vast host appeared opposite the Mandan village at old Fort Lincoln, and were ferried over in bull-boats by the Mandan.

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[1] Arikara tell me that they had a village exactly where Fort Clark Station now is.—M. R. Gilmore.

The Hidatsa built a village near the Mandan and remained there for many years, learning corn-growing from the Mandan. There also the quarrel took place which resulted in part of the Hidatsa separating from the rest and moving westward. These people were the Crow of later times. The vicinity of Heart River becoming over-populated, at the suggestion of the Mandan chief, and by mutual agreement, the Hidatsa moved up to Knife River, whether in one move or by gradual stages is not told. Thereafter Knife River remained the seat of the Hidatsa, until the final removal to Fort Berthold, although a number of temporary movements were made by different segments of the tribe which resulted in the establishment for short periods of a number of villages farther north along the river. These we shall consider later. The last movement of this kind was made by the band of Crow-flies-high, after the tribe reached Fort Berthold, to a site near Fort Union, where the band remained many years, not returning to the reservation until about 1890.

The Amahami were apparently very closely related to the Hidatsa, with whom they lived for a great many years. According to tradition, they started originally from the shore of an eastern sea. Thence they went northward to a timbered country through which they traveled for a long time. When they finally emerged from the timber, somewhere southeast of Fargo, North Dakota, they built a large village and remained a long time. One day a party of hunters met some Hidatsa, and both parties were surprised that they were able to understand each other. The two tribes dwelt in close friendship and association for many years; when the Hidatsa moved to the Mandan country the Amahami soon joined them there. After that whenever the Hidatsa moved, they moved too. One tradition states that they lived in one of the villages near Sanger for a time.[2] Early white travelers found them in a village south of Knife River, close to the Hidatsa. They were at that time very few in number and soon after became entirely incorporated into the Hidatsa tribe.

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[1] Clark, W. P., in the *Indian Sign Language* (Philadelphia, 1885) states that when the Hidatsa came to the Mandan the Arikara still lived below Fort Pierre. Their arrival was therefore probably before 1770, but the younger Vérendrye is supposed to have met the Crow (Beaux Hommes) west of the Missouri in 1742.

These Beaux Hommes are probably the same people that Joseph La France states were living about 1740 in the plains west of Red River, and east of the Missouri (La France, quoted in Hobbs, Hudson Bay, 1744). The Beaux Hommes of La France may have been a rear guard that lingered behind after the advance body of the people had passed beyond the Missouri. As the Vérendryes were near Lake Winnipeg before 1740, they must have known the people La France calls Beaux Hommes in their old home near Red River. La France is certainly trustworthy—his account of all the tribes near Red River, Lake Winnipeg, Assiniboin River, etc., is quite accurate.—George E. Hyde.

[2] October 23, 1804, Lewis and Clark camped on the west bank just below Pretty Point and noted just before camping an old village site of the Amahami on the north or east side of the river, evidently between one and two miles below Pretty Point. (*Original Journals*, vol. 1, 203.)

This village would be below the Mandan villages, where they lived prior to the destruction of their eastern village about 1793.

VILLAGE SITES LOCATED.

Having roughly sketched the story of the tribes who play a part in the archæology of the region, let us next make a summary of all the village sites so far located, in one way or another. All sites reported will be listed and a short sketch will be given of those which have been personally observed. The sites will be taken in order, proceeding up the Missouri from Grand River.

Grand River Arikara Sites. The first sites are the old Arikara villages above Grand River and a little above Oak Creek. These villages were occupied by the Arikara when Lewis and Clark visited them, and intermittently for many years thereafter. The first of these villages was on an island (modern Ashley Island) three and a half miles above Oak Creek; four miles above this island village were the two upper villages on opposite banks of a small creek which runs into the Missouri from the west.[1] We have not visited these sites and there does not seem to be any printed description of them as they appear today.

There are reported to be a number of other Arikara sites in this neighborhood, along the Missouri and extending a considerable distance up Grand River, but the exact number and location is still unknown, as far as any accessible account is concerned.[2]

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[1] The third or upper village of this group is shown on the Missouri River Commission maps, on Sheet XLV at mile 515 as "Ancient Indian Village." The other two villages of 1804 are not shown on this sheet.

[2] There are along the Missouri, both above and below Grand River, a number of old village sites, most of which may be considered as belonging to the Grand River group of Arikara villages. These sites are as follows:—

1. Village of eighty lodges on the west bank of the Missouri, 5½ miles below what Lewis and Clark term Otter Creek (present Swan Creek, Walworth County, South Dakota). Lewis and Clark state this was an Arikara village and had been occupied as late as the spring of 1804. This was perhaps a winter village.
2. Village of sixty lodges on west bank of the Missouri and south bank of Moreau River. This was a winter village, apparently occupied in the winter of 1803–1804, according to Lewis and Clark.
3. "Site of Indian Village and Fortification" marked on west bank of the Missouri, 10½ miles above Moreau River on Sheet XLV. (Not noted by Lewis and Clark and perhaps of later date.)
4. Village on Grouse Island (modern Blue Blanket Island).
5. "Site of Indian Village" marked on Sheet XLV on west bank of the river just above Blue Blanket Island. (Not noted by Lewis and Clark.)
6. First Arikara village of 1804, on modern Ashley Island, 3½ miles above Oak Creek. This village was abandoned before 1811.
7. Second Arikara village of 1804, 4 miles above the island village, on west bank of the river and south bank of a small creek.
8. Third village of 1804, on the north bank of the creek, just above the second village.
9. "Ancient Indian Village," marked on Sheet XLV on the west side of the river 4½ miles above the upper Arikara village of 1804. Not noted by Lewis and Clark.

These are probably all Arikara sites, but it is not likely that more than three of them were occupied at any one time.

On Sheet XLIV of the Missouri River Commission map is marked "Indian Mounds" on the east side of the Missouri and on the south bank of Swan Creek. This is a very interesting site, if it is an Indian village. So far as known, there is no other site on the east bank between the Nebraska line and the Cannonball River with the exception of the "Buffalo Pound" village at the mouth of Big Beaver Creek, said to be Mandan, although the Dakota claim the Cheyenne formerly had a village near Little Cheyenne River.

Cheyenne Site at Farm School. (No. 12.) Above the Arikara villages of the Grand River group there is a stretch of river of some twenty-five miles along which no village sites are known. At the end of this stretch of river we come to the site of the first old Cheyenne village, at the Farm School, on the Standing Rock Indian Reservation. We have not visited this site. According to Dakota tradition this village was built by the band of Cheyenne who came from the village on Sheyenne River, near Lisbon, North Dakota. As the Farm School was built directly over the old village, the site is probably almost obliterated.

Blackfoot Creek Site. Some three miles north of the Farm School, on the west side of the Missouri and on the south bank of Blackfoot Creek, is a site which was recently shown to Captain A. B. Welch of the U. S. Army by some of his friends among the Sioux, who stated that this was an old Mandan village. This site is also marked on the Missouri River Commission maps, Sheet XLVI, as "Ancient Village."[1]

Slob Town and Porcupine Creek Cheyenne Sites. (Nos. 13 and 45.)

On October 14, 1804, Clark states:—

> Imediately opposit our Camp on the L.S. I observe an antient fortification the walls of which appear to be 8 or 10 feet high (*most of it washed in*).

This site was on the west bank of the Missouri, below Four-mile Creek and near Fire Heart Butte, as nearly as can be judged. If there is a village site in this neighborhood, we have failed to find any trace of it.

A little less than two miles below Porcupine Creek, on the west side of the river, is a site (No. 45) which was recently located by Dr. George Bird Grinnell. This is, according to Dakota tradition, an old Cheyenne village. Above here, on the south bank of Porcupine Creek, is the best known of the Cheyenne village sites on the Missouri.[2]

Dr. A. McG. Beede, formerly Episcopal missionary at Cannonball, advised the writer, who had determined the position of this Porcupine Creek village some years ago, that the river had left no traces of the site.

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[1] *History of the Lewis and Clark Expedition*, vol. 1, 166.

[2] It seems to be impossible at the present writing to reconcile the statements made by various persons as to the Cheyenne villages along this part of the river. Dr. Grinnell heard of several traditional sites along here and visited three of them: the Porcupine Creek site, the site about two miles below Porcupine Creek, and the Farm School site. The Dakota claim there were other Cheyenne villages in this neighborhood.

Lewis and Clark passed along this part of the river on October 15th and 16th, 1804, and their camp on the night of October 15–16 appears to have been about a mile below the Porcupine Creek site. They state that they passed an old Cheyenne village on the west side of the river just before they camped for the night on October 15. This would appear to be the village Dr. Grinnell found, about two miles below Porcupine Creek. To add to the confusion, Ordway in his journal states that an old Cheyenne village was passed on October 15th some distance below camp. He states that after passing this village they passed a creek on the west side of the river, timbered bottoms on both sides of the river, and another creek on the west side, just above which they camped on the east bank. On the next day, October 16th both Clark and Ordway state in their journals that a second Cheyenne village was passed. This was apparently the site on the south bank of Porcupine Creek. From these journals it would appear that there were three Cheyenne villages, one, seen only by Ordway, some two miles below Fort Yates, and two others near Porcupine Creek. See Lewis and Clark, *ibid.*, 166–169 and the *Journals* of Lewis and Ordway, (*Collections, Wisconsin Historical Society*, vol. 22, 154, 155).

Dr. Grinnell, however, finds that the whole village is intact and the lodge rings very plain. This is the village built by the first band of Cheyenne to reach the Missouri from Minnesota according to Dakota tradition.

Buffalo Corral Site. The next site occurs on the east side of the river and a few miles higher up. It is that above the mouth of Beaver Creek, in Emmons County, North Dakota. This village is somewhat vaguely credited to the Mandan and is called the Buffalo Corral Village, as it is said that a long-remembered killing of buffalo by the pound method once occurred there.

Cannonball Site. (No. 14.) The next located site is on the high bluff marking the confluence of the Cannonball River with the Missouri. This site is on the northwest edge of the town of Cannon Ball and in area is fairly large. It appears to show at least two occupations, one over the other, and apparently was surrounded by several different ditches.

This site, as suggested by the Dakota, may be at least partly Mandan, and its size may be explained by supposing that this is the village at which the three tribes—Cheyenne, Arikara and Mandan—united for a year or two, for mutual protection from the Dakota, as is set forth in the traditions of several tribes.

In this vicinity, a short distance southwest of the site, is a hill known to the Dakota as 'the Holy Hill of the Mandans.' The reticence of the Mandan themselves with regard to this site is quite striking, and an explanation of it would be interesting.

Old Site not Visited. On the Missouri between one and two miles above the Cannonball is still another site, not visited by the writer, and not definitely credited to any tribe.

Fort Rice Site. (No. 15.) Again, on the west side of the river and on the southeastern outskirts of the town of Fort Rice, are the very indistinct remains of rather a large village which is now a plowed field. This site is somewhat uncertainly credited to the Mandan, according to Mr. H. C. Fish, who visited many of these sites with the North Dakota Historical Society expedition, when several of the older Fort Berthold Indians were with the party.

Glencoe and Livona Sites. (No. 60.) A site has been recently reported near Livona, North Dakota, on the east side.

A little higher up, on the east bank, southwest of Glencoe Post Office, and on what is known as the Shermer Place, is another site, not definitely established as belonging to any particular tribe, and two miles above it still another very indistinct site was recently found.

Huff Site. (No. 18.) Again, on the west side, just below the present village of Huff and on the edge of the bench, occurs another very striking site.

Eagle's Nose Site. (No. 43.) About two miles farther up we come to one of the most romantically situated and most interesting of any of the sites. The river along here runs south of east; a low bench extends back from the river for a variable distance, then breaks into a miniature Bad Land area and rises into the high range of hills called by Lewis and Clark the Eagle Nest Hills and reported by them to have been frequented for the purpose of catching war eagles. These hills are cut frequently by deep, timbered coulées. Perhaps two miles above Huff the bad lands come directly to the river bank, and one long and peculiarly shaped clay ridge extends to the bank in an unbroken outline, very closely resembling the beak of an eagle. This ridge plays an important part in Mandan tradition. The beak merges into the range of hills at the south; on the west of its base is a deep coulee, filled with wild fruit trees, and on the west side (of the coulée) a high promontory juts out from the range of hills, forming a flat-topped butte connected with the range of hills behind it by a narrow neck. The flat area is perhaps ten acres in extent, and the sides drop down precipitously all around except a narrow passage at the southeast, like those of a mesa in the Southwest. On the flat top of this promontory are the remains of the Eagle's Nose Village of the Mandan, very prominent in many stories and traditions, and by some said to have been built by the culture-hero, Good Furred Robe, although in this it may be confused with the Huff site. A steep path on the east side leads down to a spring, about halfway down the slope.

This village, only recently inspected, is undoubtedly the one seen by Lewis and Clark opposite and just below the point where they camped for the night on October 19, 1804.[1]

Holbrook Site. (No. 46.) About three miles farther up and on the east bank of the river is another site. This is situated on the edge of a high bluff, just below the mouth of Apple Creek, on a farm known as the Holbrook Place. This site has been described in a previous paper.[2]

Bad or Red Water Site. (No. 1.) A few miles higher, on the west side, and a mile above the mouth of Little Heart Creek, is another site, which is identified as the Bad or Red Water Village of Mandan tradition.

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[1] Clark says, (*Original Journals*, vol. 1, 199): "On the point of a hill, 90 feet above the lower plane, I observed the remains of an old village, (*high, strong, watchtower &c.*) which had been fortified, the Indian Chief with us tels me, a party of Mandins lived there, *Here first saw ruins of Mandan nation.*"

[2] Will, G. F., "Some New Missouri River Valley Sites in North Dakota" (*American Anthropologist*, N.S.. vol. 12, 58–60, 1910).

Fort Lincoln Site. (No. 2.) Proceeding a few miles farther up, we come to the well known Fort Lincoln site, situated at the foot of the hill below the old infantry barracks at that post and on a gentle slope reaching to the bluff edge. This site has been briefly described in a previous paper,[1] and is now owned by the State Historical Society. (Fig. 1.)

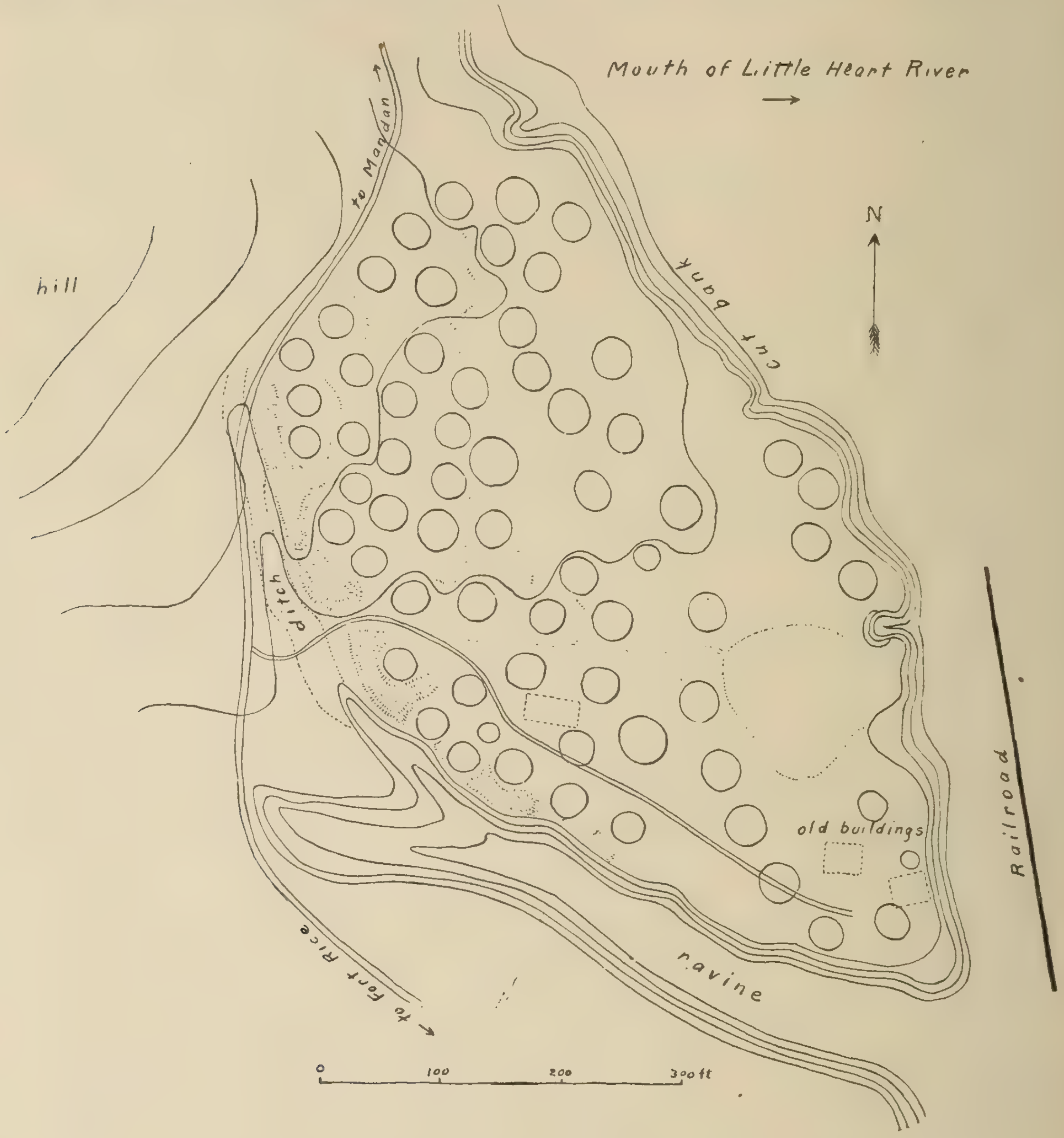

Fig. 1. Fort Abraham Lincoln Mandan Site (No. 2).

Motsiff Site. (No. 3.) Above this site we come to the Motsiff farm, just south of the outskirts of the city of Mandan, North Dakota. Here there is a very prominent site with unusually high mounds and depressions of considerable depth. It is well known to the Indians as Big Village, or a portion of that village.

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[2] Will and Spinden, *The Mandans*, 148. This is the site Clark calls the "1st old Mandan Village." Ordway also calls it that.

Scattered Village Site. In the eastern part of the present city of Mandan, considerably built-over, but nevertheless distinguishable, are the remains of 'Scattered Village' which was occupied in the summer, according to tradition, by those who had fields in the fertile bottomland close by.

According to some of the old Indians, a site is also located on the outskirts of Bismarck, about opposite the two villages above described; but if it ever was there all traces of it must have been destroyed many years ago.[1]

Ward Site. (No. 47.) The next evident site is, however, on the east side of the river, some three miles northwest of Bismarck, and on the flat top of the high bluff, just to the south of the Ward Farm and near the mouth of Burnt Creek. This site has been described with a map in a previous paper,[2] and is identified by some of the Indians as the village of a chief known as 'Looking.'

Sperry Site. (No. 39.) About four miles further north is the Sperry site, on the flat top of the high bluff and on the south side of Burnt Creek, where it emerges from the hills into the Missouri River bottoms. This site is of considerable size, and Mr. Lynn Sperry has a large collection of articles which he has found there at various times. Most of this site has been plowed, and it is at present very indistinct.[3]

Boley Site. (No. 20.) On the opposite or west side of the river, northeast of Mandan, is the Boley site, situated on the low bench edge and on the Boley Farm. It is a very well-marked site, but has been cut through by a railroad grade which destroyed a considerable part of it.[4] (Fig. 2.)

Otter Creek Site. (No. 5.) A few miles further up, on the west side, and about two miles below Harmon, there is another small and indistinct site. This is situated on a high bluff, just south of the point where Otter Creek runs into the river bottoms. It shows very shallow hut rings and would appear to have been occupied only a short time.

Burgois Site. (No. 40.) Almost opposite this and on the east side of the river is the largest and best-preserved of all the sites in this region: the Burgois or Double-Ditch site, which is fully described in "The Mandans" and is now held in trust for the State Historical Society.

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[1] Clark's statement (*History of the Expedition*, etc., 175) agrees with this tradition. He places the "2d village of the Mandins" on the north side of the river, evidently in the southern edge of Bismarck, with another old site opposite it, in the bottoms on the south side of the Missouri.

[2] Will and Spinden, *The Mandans*, 148. This site was not seen by Lewis and Clark.

[3] Lewis and Clark did not note the Sperry site.

[4] Lewis and Clark noted this site. They passed it during the first course on October 22d. (*History of the Expedition*, etc., vol. 1, 175.)

This site is considered by the Mandan to have been one of their old villages, and they know it by the name of "Yellow Village" or "Yellow Clay Village."

Larson Site. (No. 41.) About four miles further north, on the same side of the river, is the Larson site, which is also described with a map in "The Mandans."

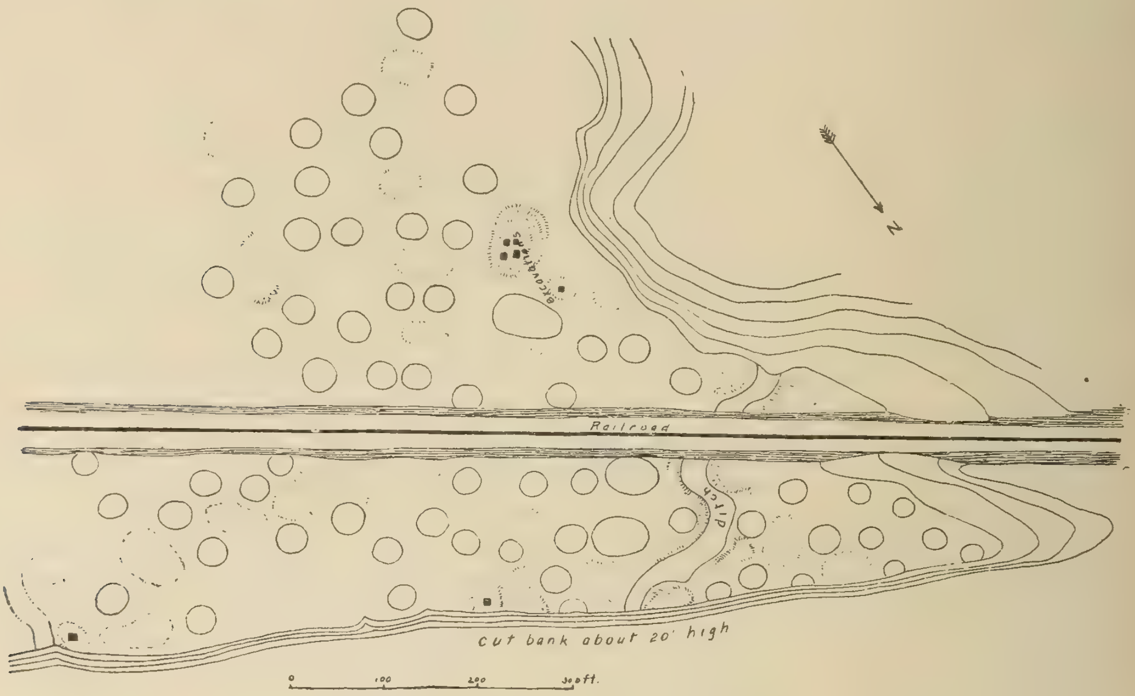

Fig. 2. Boley Mandan Site (No. 20).

No other villages have been located on the east side of the river, until the Knife River is reached, although further exploration might reveal other sites. One has been reported on the south side of Turtle Creek at its emergence into the river bottoms, but it is no longer possible to locate the site with any certainty.[1] Another has been recently reported north of Painted Woods.

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[1] We have now passed all of the sites of the old Heart River group. Clark describes this group as made up of nine sites along a stretch of twenty miles of river, beginning with the First Old Mandan village at Fort Lincoln and ending at a point near Harmon. He locates three of these sites on the east and six on the west bank. Including all the sites mentioned by Clark and those known today, we have along this twenty mile stretch the following sites: 1. Fort Lincoln site; 2. Clark's site on east bank south of Bismarck; 3. Big Village, opposite No. 2; 3. Scattered Village; 4. Clark's site in the northern part of Bismarck; 5. The Ward site; 6. The Boley site; 7. The Sperry site, not seen by Clark; 8. Clark's site on west bank two miles above the Boley site; 9. The Burgois site; 10. Site on the east bank two miles above the Burgois site (Clark saw this or the Burgois site); 11. Clark's site on the west side at the mouth of a large creek, evidently the Otter Creek site below Harmon; 12. The Larson site. Besides which there are about five other Mandan sites below Fort Lincoln, making nearly nineteen sites that we might include in the Heart River group.

This is by far the greatest group of village sites along the upper Missouri at any one place. I set down on a map every site mentioned, from the northern line of Nebraska to a point just above Knife River. There are eighty-two sites, and the Mandan sites from near Eagle Nose Village to Harmon make up just about one-fourth of this total number.—George E. Hyde.

On the west side of the river the Square Buttes come down as a rough barrier to the river a short distance above Harmon. They rise abruptly from the river's edge and present few locations for a village; and no sites are found on this side until we come some distance higher up.

Molander Site. (No. 25.) The first site seen above the Square Buttes is the Molander site, situated on the Molander Farm, some two or three miles above the present station of Price. This site lies back from the edge of a rather high bench just south of a deep coulée full of water-holes. It has been very little disturbed and is in excellent condition. The ditch about the site is arranged with angles jutting out at regular intervals and completely surrounds the site. A low ridge of earth follows the ditch on the inner side and the interior has a large number of very plainly marked house rings. At the foot of this bluff, on the east, is a low, narrow bench, not over twenty feet above the level of the bottoms. On this are signs, considerably obliterated by cultivation, of a supplementary village, perhaps occupied in conjunction with the upper one. (Figs. 3, 4).

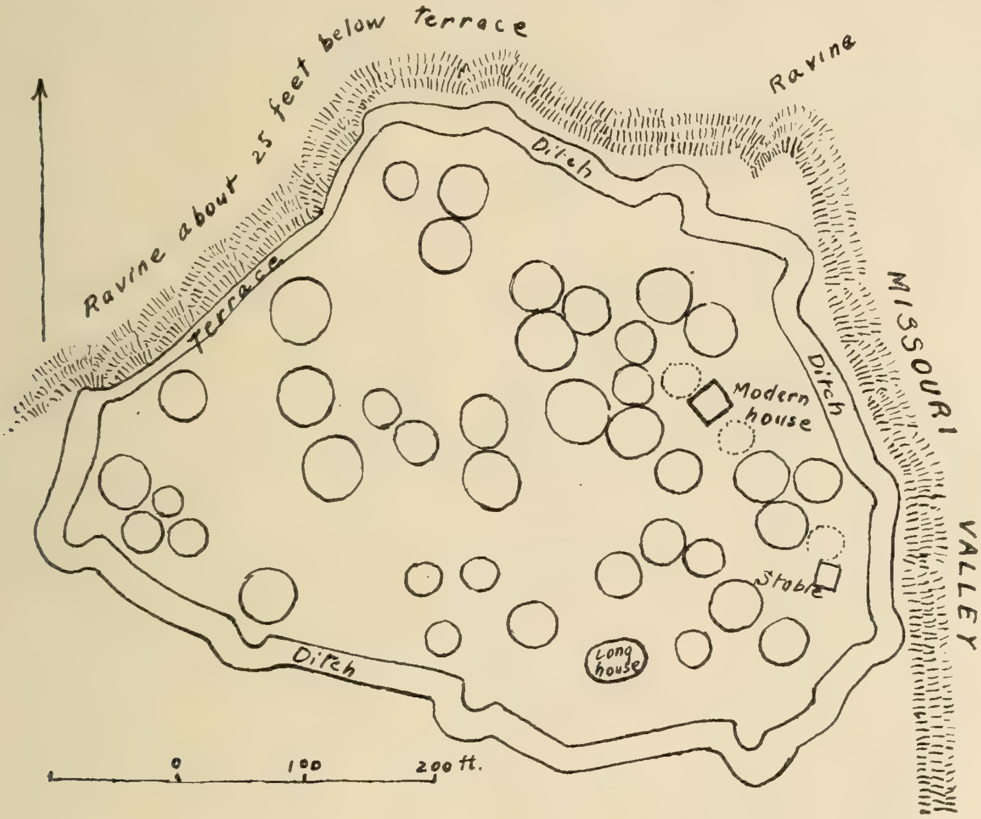

Fig. 3. Map of Molander Site from St. Paul Pioneer Press, about 1883 (No. 25).

Pretty Point Site. (No. 7.) A few miles above this place we come to the high bench point, jutting out into the river, known to rivermen and

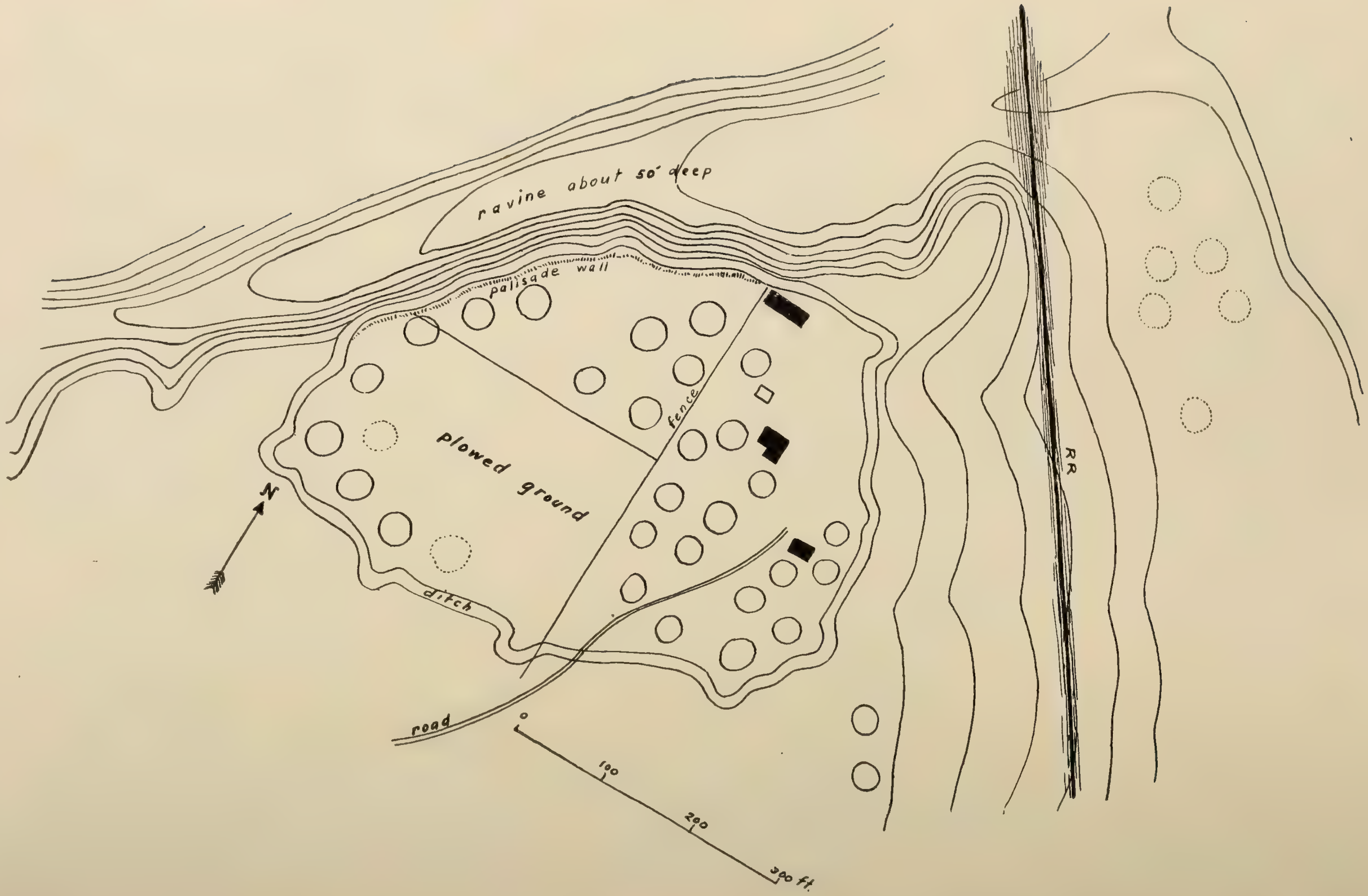

Fig. 4. Molander Site (No. 25).

marked on river maps as Pretty Point. On the very end of this point are the evidences of what was apparently a small and not very permanent village. The number of house rings is small, and there are no traces of a ditch. The cutbank to the river, however, shows a number of old caches.

Smith Site. (No. 26.) At the north base of Pretty Point is located the Smith Place, and just to the north of it on the bench edge are the remains of another site apparently divided into two parts by a deep coulée. This site has been so mutilated by railroad grading as to leave few clues as to its original condition.

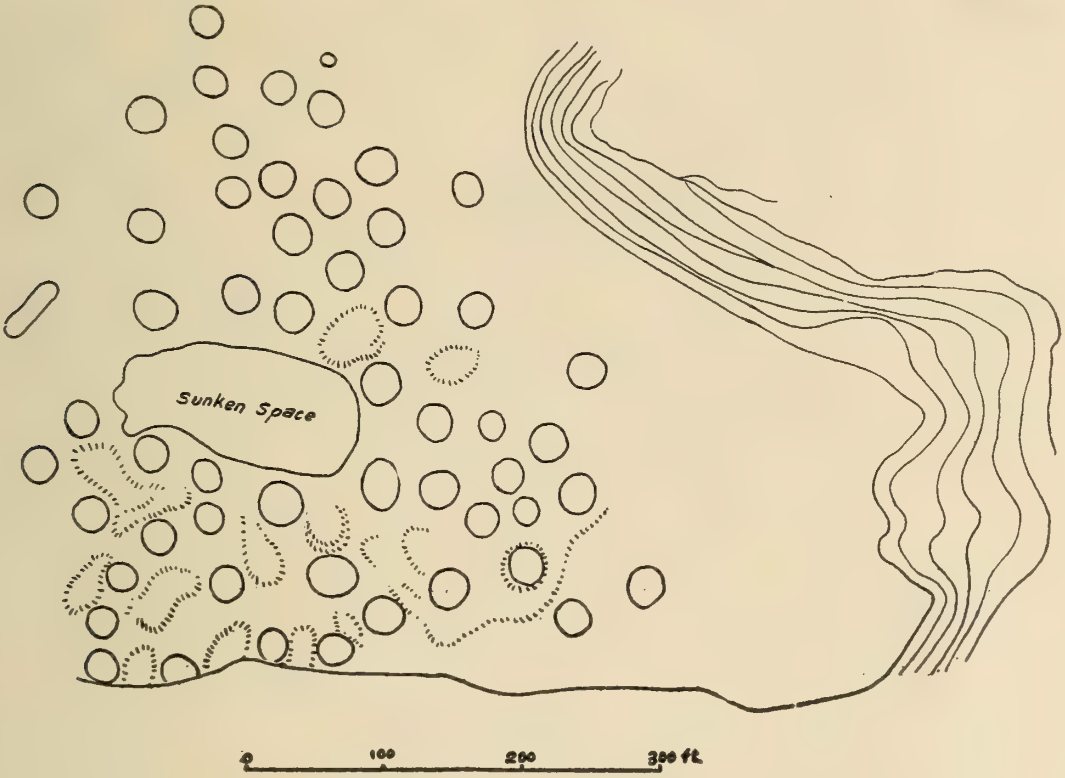

Fig. 5. Lower Sanger Site (No. 8).

Lower Sanger Site. (No. 8.) The next site is about two miles farther up and about one mile below Sanger, North Dakota. It is of medium size, fairly well marked, with a rather indistinct ditch around it and a number of mounds three to six feet high scattered among the house rings. The site is located on a flat-topped bluff just south of a deep coulée with water-holes. (Fig. 5).

Upper Sanger Site. (No. 9.) On the north edge of Sanger village and partly occupied by the River Elevator is the Sanger site. This is on the high bench which falls off directly to the river. Most of the site is very distinct and it is on a rather uneven piece of ground. The mounds are numerous and of considerable size and elevation. (Fig. 6.)

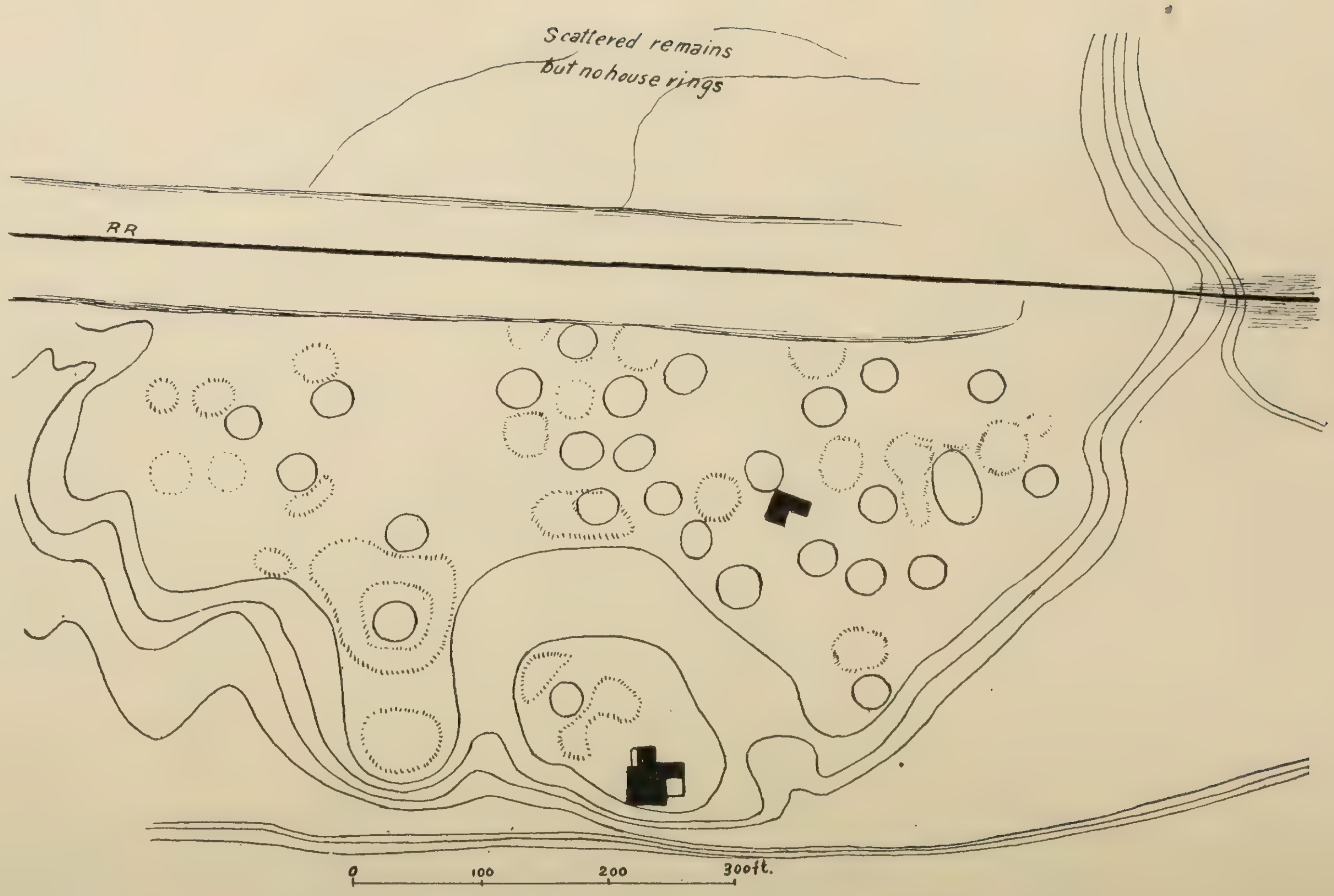

Fig. 6. Upper Sanger Site (No. 9).

Just to the north across the coulée are further remains, not distinct enough to indicate any permanent village, but apparently a place where a number of lodges had once been built.

The next group of sites brings us nearly to the Knife River region. There are three in the vicinity of Hensler, North Dakota, all of which are mentioned by Lewis and Clark.

Bagnall Site. (No. 48.) The first of these, the Bagnall site, is about five miles above Sanger. There are no distinguishable sites between these two points, but along the bench edge bone fragments and broken pottery occur very frequently. This site is on the edge of the low bench which slopes up toward the northwest to a round knoll. It is entirely surrounded by a wall and ditch and shows very well marked house rings; but there are no very great elevations or depressions.

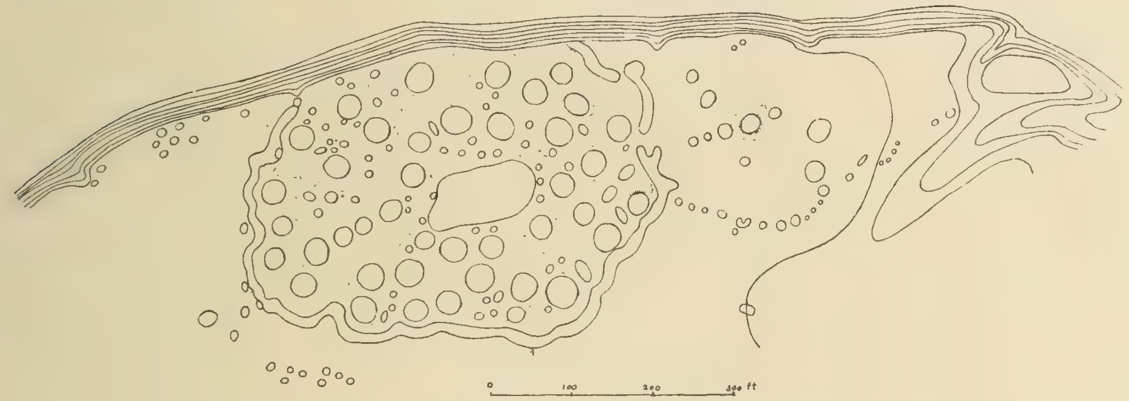

Fig 7. Greenshield Site (No. 28), probably Arikara.

Greenshield Site. (No. 28.) To the east of Hensler the bench rises to a high bluff on the Greenshield Place, and at the end of this bluff, about one and a half miles from Hensler, is a large and well-marked site with a wonderful outlook over the Missouri bottoms and up and down the river for many miles. It lies between two deep draws and is surrounded by many depressions, resembling old Arikara graves. There are also traces of what must have been an early trading-post. (Fig. 7).

Hensler Site. (No. 27.) Almost directly north of Hensler, on the edge of the level bench and about one mile distant, is the third site of this group. It is also very well marked, surrounded by a low ridge and shallow ditch, and showing no great depth or elevations.

These sites evidently constitute the three villages—one Mandan (the Bagnall), and two Arikara (the Greenshield and Hensler sites), mentioned by Lewis and Clark.[1]

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[1] *History of the Expedition*, etc., vol. 1, 177.

These Arikara villages were evidently occupied more than once. Thus the Mandan tradition states that the Arikara moved up to this locality before the smallpox of 1780. They came up here again in 1795 and 1796 and abandoned the villages in 1799. In the spring of 1805 they moved up to these villages again, but the Mandan and Hidatsa evidently were opposed to having the Arikara near them and refused to consent to their occupation of the old villages.

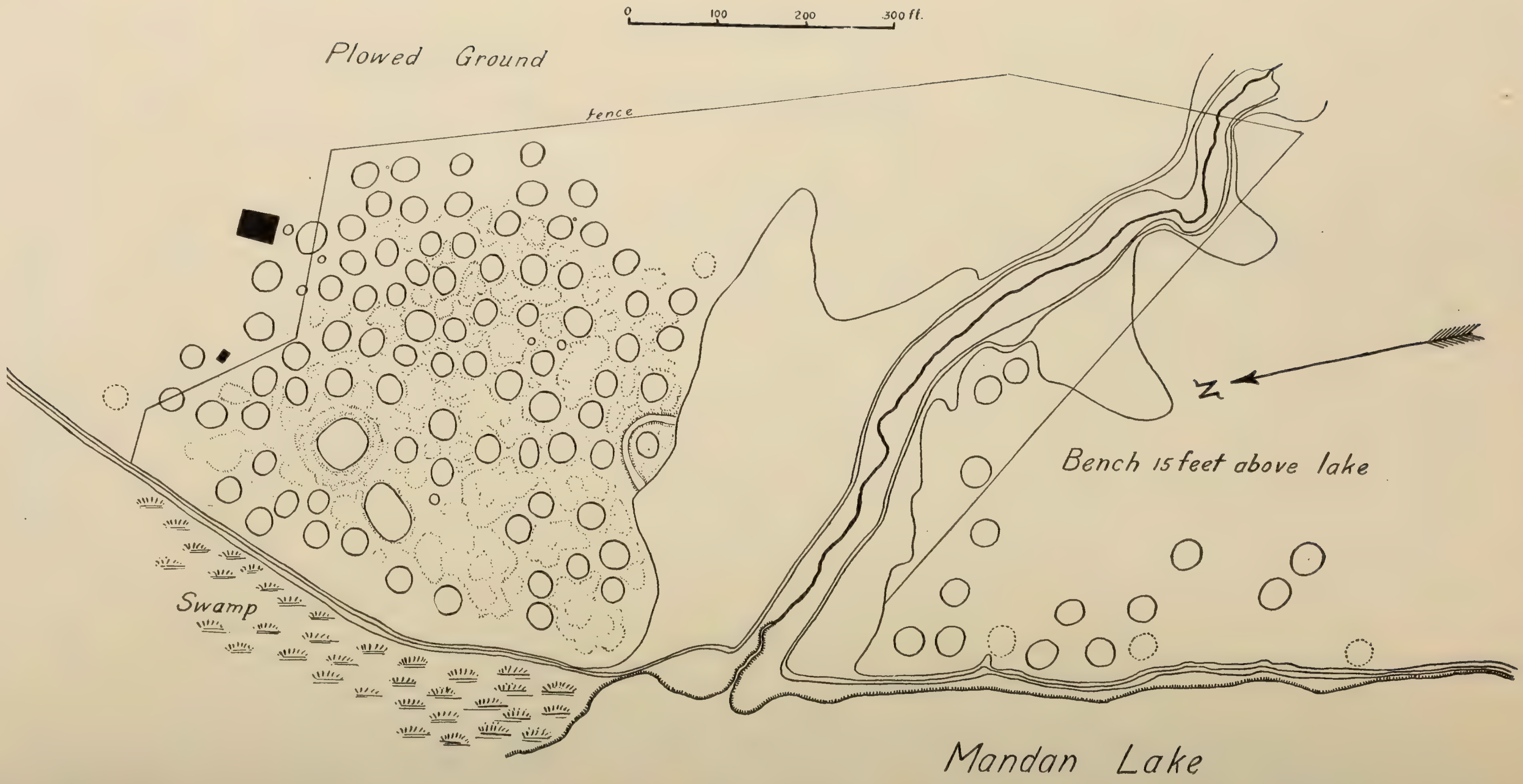

Fig. 8. Mandan Lake Sites (No. 29).

Mandan Lake Sites. (No. 29.) The next sites are some four or five miles above, on the bench along the east side of Mandan Lake. There are apparently two large sites here, divided by a deep draw or washout which extends back into the hills to the south. These two sites are well marked and abound in flint, finished artifacts, partly worked pieces, and unworked fragments. (Fig. 8).

Fort Clark Station Site. (No. 10.) Three or four miles above, and on the east edge of the present village of Fort Clark, is a double site, divided by a ravine and situated close to the edge of the bench. The area is not extensive, nor are the rings and mounds well marked. As near as can be judged, Lewis and Clark state that this was the location of the Mandan when the Arikara came up to build in their vicinity.

Old Fort Clark Site. (No. 11.) About one and a half miles farther up is the famous old Fort Clark site, built by the Mandan and occupied by them when Henry, Lewis and Clark, Maximilian, and Catlin visited them, and taken over by the Arikara after 1838 and used by them for many years. This site is in excellent condition and has been several times mapped. Perhaps the most interesting of these maps is one made by the Indians of the Fort Berthold Reservation and giving the names of the occupants of many of the old lodges. The site of the old trading-post here is very easily located even today. This site is now owned by the State Historical Society.

Fort Mandan Site. (No. 49.) Almost opposite here, on the east side of the river, was the village occupied by the Mandan in 1804, which is still in fair preservation, according to a recent report.

Deapolis Site. (No. 30.) A few miles farther up on the west side is the site of the Mandan Dupta or Ruptare. This is on the river bank close to the Deapolis River Elevator. It is in excellent condition, and is now owned by the State Historical Society.

Small Site recently Obliterated. (No. 31.) Two or three miles higher up, on the edge of the high bench, a small site was located and photographed by Mr. H. C. Fish and the writer some ten years ago. Railroad work has since obliterated it, but it very evidently marks the place mentioned by Boller[1] to which a few Mandan returned from Fort Berthold for some years.

Amahami Site. (No. 32.) We now come to the well-known Knife River Hidatsa sites. The first of these is on the edge of the bench on the outskirts of Stanton village and is partly enclosed in the courthouse grounds. This site is well marked, level, and rather less encumbered with mounds and depressions than most of the sites. This was the old village of the small Amahami tribe.

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[1] Boller, Henry A., *Among the Indians. Eight Years in the Far West: 1858–1866. Embracing Sketches of Montana and Salt Lake.* Philadelphia, 1868. (321.)

Lower Hidatsa Site. (Nos. 33–34.) Nearly a mile farther up, and on the south side of Knife River, where it debouches into the Missouri bottoms, is the first Hidatsa site. This site really consists of two separate and distinct parts, one being on the bank, the other to the southwest and somewhat back from the river. It is considered by the Hidatsa, however, as only one village. The elevated road from the Amahami village to this one, mentioned by Henry, is still very clearly defined. The sites themselves, judged from the height of the mounds and the depth of the rings, apparently show very long occupancy. (Figs. 9 and 10.)

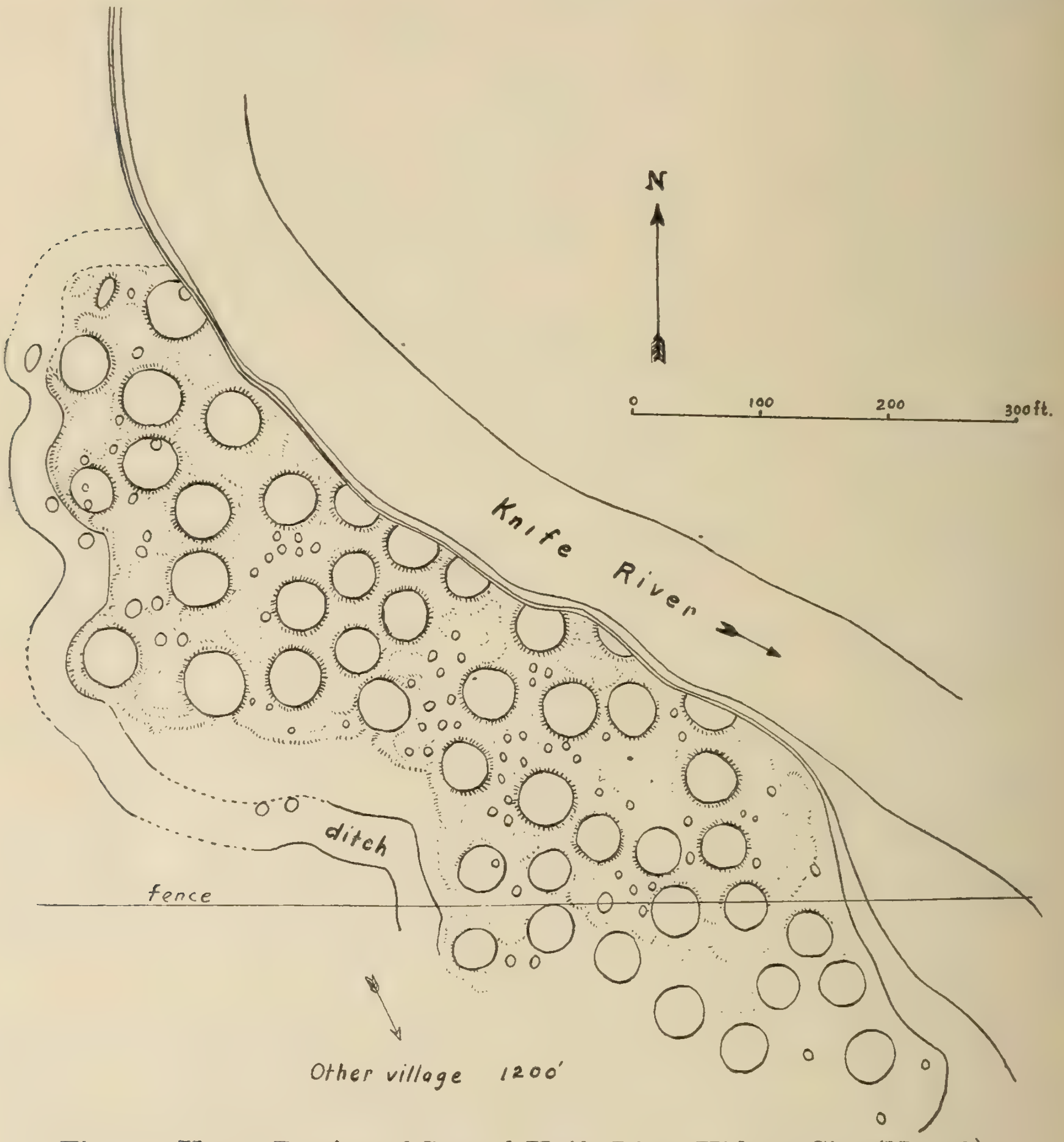

Fig. 9. Upper Portion of Second Knife River Hidatsa Site (No. 33).

Big Hidatsa Site. (No. 35.) On the north side of Knife River and on the edge of the bench which slopes up at the back to the hill where the Hidatsa sun dance was formerly observed, is the great Hidatsa village site. This is on land owned by Mr. Olds, is a very large site, and is marked by very deep house rings and many mounds.

Energy Site. (No. 51.) About six or seven miles further up the Missouri, and on the east bank, near the site of the now abandoned Energy Post Office, is another site, presumably Hidatsa, concerning which we have no very definite information.

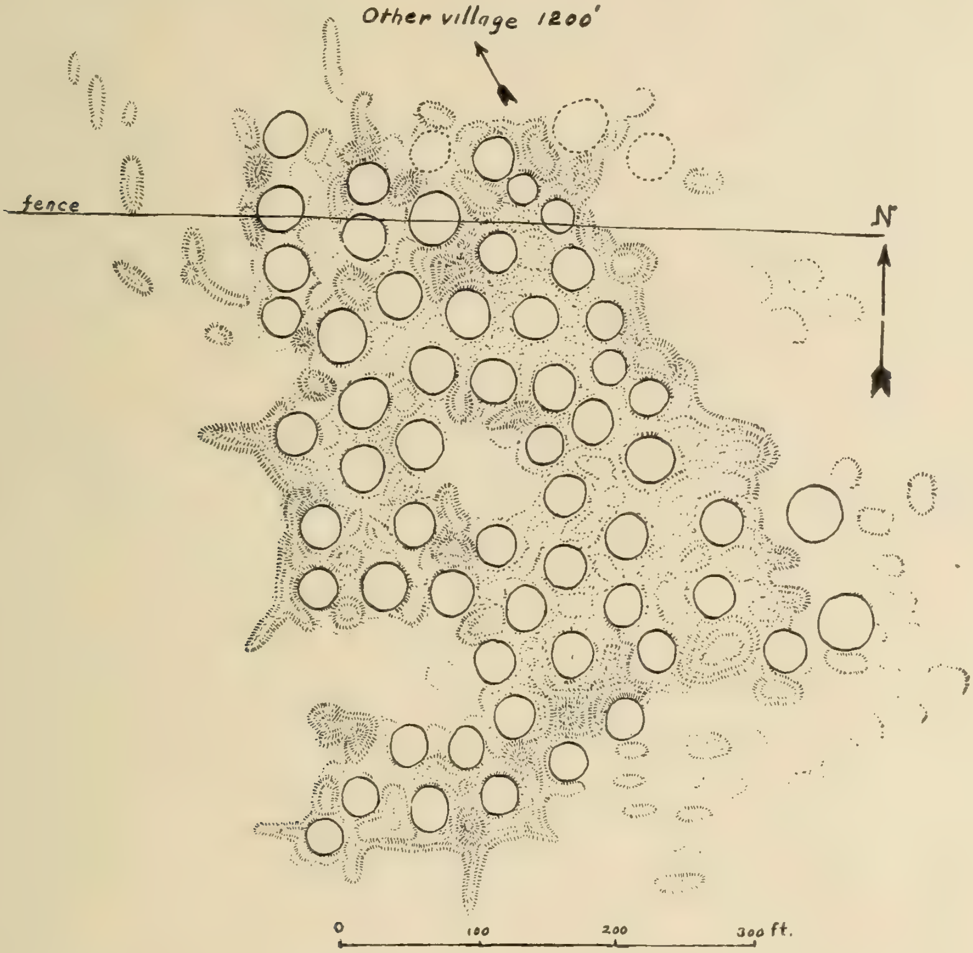

Fig. 10. Lower Portion of Second Knife River Site, Hidatsa (No. 34).

Mannhaven Site. (No. 52.) A few miles above, on the south side, and just above Mannhaven, is another site, claimed by the Hidatsa. This site was doubtless affiliated with the winter village site across the river on the north side, near the mouth of Wolf Creek, mentioned by Henry, but now quite obliterated.

Somewhere in this locality was the Red Springs and the winter village of the Arikara, frequently mentioned by Boller, but not yet identified.

Rock Village Site. (No. 53.) Still further up, and again on the south side, is the site of the Hidatsa "Rock Village." This site is just above Expansion village and takes its name from Emanuel Rock in the river at that point, an object well known to all rivermen and named after Manuel Lisa who for a short time maintained a trading-post somewhere in the vicinity.

Last Arikara Sites. (No. 54–55.) Still further up, just above the river elevator at Ree, is the first of the two Arikara sites, built by that tribe and occupied for about a year before they crossed the river and built near their allies at Old Fort Berthold. These sites are separated by less than a mile, show very short occupancy, and are exactly opposite the old Fort Berthold site. Tradition says that certain of the best criers could converse between the two sites with the river separating them.

Old Fort Berthold Site. (No. 56.) The old Fort Berthold site is still in good condition and requires no description, as there are many printed accounts that give full information about it.

Above old Fort Berthold there are several sites, all of which are ascribed to the Hidatsa, which were probably built by wandering bands from the Knife River seat of the tribe. Most of these sites have not been personally inspected, but they are said to show signs of only very brief occupancy.

Bad Lands Site. (No. 59.) The first of these is about four miles below Elbowoods in the small area of bad lands, situated on the top of a high point some distance back from the river. It is said to have been ruled by a very high-handed and cruel chief and to have been abandoned as soon as his death gave the people an opportunity to assert themselves. This site has been visited recently and was found to be on the flat top of a very high, steep-sided hill, the top having an area of some two acres. There are about twenty shallow and rather indistinct rings. The odd feature of the site was the small rings, more like tipi rings, being about eighteen feet in diameter. Some bones and pottery fragments were found.

Elbowoods Site. (No. 57.) The second of these sites is on the west bank of the river opposite the present Indian agency at Elbowoods. It is on a high bank, not far back from the river.

An interesting story regarding this site has been recently secured, versions coming from members of both tribes concerned in the events narrated, the Hidatsa and the Dakota. The story brings in an interesting item in describing a plan of water storage, a feature concerning which practically nothing had previously been secured.

It seems that on a certain occasion the Dakota sent out a large war party to destroy this particular village, which was located on a high and very inaccessible promontory. A hunting band of the Hidatsa ranging far from home, happened to discover the war party and its object, and at once hastened home to their chief with the tidings.

The chief immediately ordered the men forth to the hunt to secure many green buffalo hides, while the women dug deep pits in the lodges. The hides were speedily brought in, and were fitted into the pits by the women. Then men, women, and children began carrying jars of water up from the river without ceasing. Just as the last reservoir was filled the Dakota appeared in the distance, and soon invested the village with the intention of reducing it through the people's suffering from thirst. There was much bitter fighting, all favorable to the Hidatsa owing to their almost impregnable situation. At the end of twelve days the Dakota decided that the people must by then have reached a very serious state and a grand assault was organized. To their surprise on launching the assault, they met a vigorous resistance in which many Dakota were killed. As a finale to the repulse the Hidatsa rolled down a number of skins full of water upon their discomfitted assailants. This so disheartened the Dakota that they at once raised the siege, leaving so many bodies of dead warriors in the vicinity so the Hidatsa say, that the village had to be abandoned on account of the stench.

Inland Sites. In addition to this list of sites along the river, there are several sites more or less inland, some actually observed, others traditional and not yet located.

First among these is the old Cheyenne site on the great bend of the Cheyenne River, in the eastern part of the State which has been observed and mapped.

Dr. Beede of Fort Yates states that there is another Cheyenne site almost directly east from Fort Yates, some fifty or sixty miles distant, in the hills near Kulm, North Dakota. This site, so far as known, has not been actually inspected. The Cheyenne who built this village are said by the Dakota to have come from Minnesota; they halted near Kulm for but a short time, then crossed the Missouri and built the village on the south bank of Porcupine Creek, above Fort Yates.

A site, also formerly described, was seen by Mr. Joseph Taylor, a pioneer trapper, in the sand hills district east or southeast of Bismarck, North Dakota. This has been tentatively suggested as the site of the village visited by the elder Vérendrye. Careful search in recent years has failed to discover any traces of this site, and it is probable that it has been obliterated by the blowing of the sand.

Two other inland sites were reported some years ago, but so far as is known have never been investigated. Neither one can be definitely ascribed to any tribe. The first of these is said to be about twenty miles northeast of Bismarck and not far from the hill known as Sibley Butte. The second is on the west bluff overlooking a small lake, a short distance west of Turtle Lake, North Dakota.[1]

Several years ago a site was reported in western Oliver or Mercer County, North Dakota, possibly one to which the Hidatsa retired at the time of the smallpox epidemic. Recently Dr. Libby of the North Dakota Historical Society has located an inland site in the Knife River valley near Beulah, North Dakota, but so far has published no account of it. This may be the site mentioned above.

Tradition among the Hidatsa locates an early village on Graham's Island in Devil's Lake, but a careful search by Mr. H. C. Fish, when connected with the North Dakota Historical Society, failed to disclose any trace of such a site.

In preparing this list of sites we have given the definite or probable identification of a particular tribe with each village site so far as possible. There are, however, a number of sites not definitely ascribable to any one tribe, so far as history and tradition go. Tradition is in too many cases vague, one narrator locating a given site at one point, another connecting the same story with another site. This is more especially true of the older sites, and it seems certain that some archæological features would present the surest means of identification. We know that some of the sites have been used by more than one tribe, and it is reasonable to suppose that this may have occurred in other cases.

The Arikara sites seem to predominate lower down the river, the older Mandan sites center in the Heart River region, while the Hidatsa sites are most numerous farther north near Knife River.

There are several much discussed and well-known sites which seem very difficult to identify. Among these are the site away from the river visited by the elder Vérendrye, the two Mandan sites on Apple Creek, the village of the chief, Looking, which is located at different points by different Indian informants, and the site of the original Dupta village, the head village of the east side people of the Mandan.

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[1] It should be noted that the troops of Generals Sibley and Sully in their campaigns against the Dakota east of the Missouri, in 1863 and 1864, frequently threw up earthworks to defend their camps, sometimes on rather an elaborate scale, and these old earthworks might easily be mistaken for the remains of Indian villages by casual observers. These earthworks are described in the reports contained in The Official Records of the Union and Confederate Armies. Some Indian remains are also mentioned in these reports.

There seems to have been a real distinction between the Mandan of the east side and those of the west. We see the name Dupta carried up river by this people and applied to several successive sites, and finally transferred to the west side at the Deapolis site of Ruptare or Duptade when the last remnants of the east side people finally crossed the river. This division of the Mandan people is borne out by Maximilian's account of the difference in dialect between the people of the Fort Clark village and those of Ruptare.

The Mandan village names and organization seem to have been in some way bound up with the band divisions and band names. This presents an interesting problem. The present organization into seven bands, one division of four bands and one of three, seems to be a corruption of the older organization, perhaps due to contact with the Hidatsa. The older organization was made up of nine or thirteen bands, and the names of these divisions appear to have corresponded quite closely to the names given by Maximilian to the old Heart River villages.

We have stated some of the difficulties that are encountered in attempting to identify the village sites from traditional information: let us now see what aid archæology promises in this task. In this archæological field there are some differences in the remains, suggested by Dr. Libby, which in the better preserved sites are clearly demonstrable. These differences were partly established by Dr. Libby's examination of recent village sites, and are partly corroborated in the descriptions of the villages by the early explorers and travelers, and further established through the statements of the older Indians as given to Dr. Gilbert L. Wilson, Dr. Libby, and the writer. In view of the agreement of the testimony from all the various sources, it seems reasonable to accept the differences in question as definitely established.

According to this view, a village of the Mandan always contained at least one open area in the center of which was the barrel-like structure of planks—the ark of the First Man. All of the houses surrounding this open area belonged to prominent men and their doorways all faced more or less inward, without pointing directly toward the central point of the open space. One of the houses in this inner circle was distinguished by a peculiar method of construction, having a flattened front. No lodge was ever built in the open space, though caches and corn scaffolds might lie within it. These are the certain distinctive features of the Mandan village. Others have been suspected, but not demonstrated satisfactorily.

The Arikara village had an open space of similar proportions to that of the Mandan village, but lacked the plank cylinder in the center, and the Arikara sacred lodge always occupied a portion of the clear area.

The Hidatsa village, unlike the two above described, had no open area and no distinctive medicine lodge, the houses being crowded together throughout the village.

The Cheyenne earthlodge village has not been described by the early travelers or in tradition, and it can only be conjectured at present that it resembled most closely the Hidatsa village, as a comparison of the maps of village sites shows. We have therefore no distinguishing features for the Cheyenne site.

There is one other sure determining feature which does not have to do with the village plan. This is the form of burial, a certain means of distinguishing between the Arikara and the other tribes, since the former always buried underground while the other tribes of the region employed the scaffold or tree burial. The finding of bodies regularly buried in graves is therefore a safe indication of Arikara occupancy of a village site. On the other hand the finding of bundles of human bones, or pieces of human bones and skulls, scattered among the débris of a village site, is a safe indication of Mandan or Hidatsa occupancy.

In addition to the fairly well-established criteria of tribal differentiation mentioned above, there are a number of other points which further investigation may add to the list. Some stress has been laid in papers by other writers on the matter of the excavation for the house floor as a distinctive factor. As has been shown in a previous paper, investigation hardly bears this out, as various witnesses give different opinions and the safest conclusion seems to be that excavation was largely a question of getting a suitable soil for floor purposes. In this connection may be considered the question of the depth of house-rings. This feature might seem to depend on the amount of excavation, but investigation seems to show that this is not the case, as we find the deep rings in the sites traditionally longest occupied, no matter which tribe occupied them, and more especially if such sites are partially sheltered from the blowing and drifting of dust and sand. In the other words, deep house-rings are the result of the building up of the surrounding village level during long years of occupancy, and of wearing down the floor by treading and daily sweeping rather than of excavation for the floors.

Other points which at various times have been suggested as distinguishing features are the location with respect to each other of the wall and the ditch, the shape of the village area, the interior house arrangement, method of roof building, location of shrines or monuments of a sacred character, and lastly, differences in pottery and in flint and bone artifacts.

Considering the above points in turn: as regards the wall and ditch, the descriptions of early travelers and the examination of sites show in some cases the wall inside the ditch, while in other instances it is outside. To the present, however, no connection has been established between the location of the wall and the identity of the tribe that occupied a village site. Local conditions would seem to account for the varying location of the wall, though it is significant that the older sites seem to have had the wall inside, as described by the elder Vérendrye.

As to the shape of the village area: it is certain that there are no manifest differences between the shape of the Mandan and Hidatsa village sites. Mr. Steinbrueck, however, has advanced a theory that Arikara sites may be determined by their shape, which he says is always more or less circular, with a wall all around, and with salients at regular intervals. The writer has observed several such sites, but has also seen supposedly Arikara sites not built in this fashion and has observed known Mandan sites in the same form.

As to interior house arrangements: differences such as we know existed here, and in the forms of corn scaffolds, sweatlodges, etc., are not of a nature to leave any definite archæological trace, and therefore must be disregarded in seeking for factors of archæological differentiation.

As to the difference in the method of building the roof and lodge, there were doubtless minor variations between the methods of the Mandan, Hidatsa, and Arikara, but it is unlikely from what we know of these differences that they would leave archæological evidence. There is, however, an old Cheyenne tradition extant which mentions that the Cheyenne earthlodge of early times was built by burying the butts of long poles in a circular ditch, then bending the tops together and tying them there. Such a widely variant method would most certainly be plainly discernible by excavation, and if this method was really employed, as can be proved or disproved at known Cheyenne sites, would give us another easily recognizable factor for determination.[1]

As to the location of shrines or monuments of a sacred character pertaining to particular tribes, we have already mentioned the sacred lodges of the Mandan and Arikara, and the Mandan plank enclosure. In addition to these we have the 'Sun Mound' so-called, at the Cannonball site, described by the Dakota as a special Mandan feature. Evidence in this matter requires much elaboration before the presence or absence of such a mound can be used as a very definite factor.

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[1] This type of earthlodge was not necessarily built by the Cheyenne in their Missouri River villages, for the tradition clearly refers to a much earlier period when the tribe lived in the country north of the Missouri, in Minnesota or eastern North Dakota. The Cheyenne, when they lived in this region near the lakes, built houses of poles covered with mats, the poles presumably being bent together at the tops and tied as above described. Later, seemingly when they moved into the plains north of the Missouri, they built the same type of house but covered it with skins instead of mats; they also built 'dug-outs' as above described.

Last we come to the matter of bone and stone artifacts, and pottery. Among these objects probably lies the best field for working out tribal occupancy of the different sites. A large amount of study, however, would be required to establish definitely the types of artifacts attributable to the several tribes. With a careful period of work elaborated by drawings and photographs, such as are given in "The Mandans," upon a known site of each of the tribes, it seems almost certain that clear differences in pottery design, shape of arrow points and bone implements, and quality of workmanship, could be demonstrated. Up to the present, however, this field of work is not open to the student. Let us hope that some organization may give us a definite report on at least one known site of each of the tribes, based upon careful excavation, so that we may have the much needed data for comparison.

Steinbrueck's List. After the above was in manuscript, there was discovered in the vaults of the North Dakota Historical Society a list of sites with their location by section and township made by Mr. E. R. Steinbrueck during his connection with the Society. This has been very courteously placed at our service by the Curator, Dr. Melvin R. Gilmore. The list locates forty-two sites, all of which have been carefully compared with our own list, and it is found that Mr. Steinbrueck lists nine sites not contained in our previous list. His list is given, herewith, numbered according to his system. His numbers 6, 17, 19, 22, 23, 24, 42 and 44 are not included in our list.

Of these new sites numbers 16 and 17 are located a short distance north of Fort Rice postoffice. Number 19 is located a short distance northwest of the present village of Huff.

His numbers 20 and 39 seem to be very nearly the same location unless the description is inaccurate, both approximating the Sperry site.

Numbers 6, 22, 44, 23 and 24 are located in a section where we had been unable to find any sites, that is, between the mouth of Square Butte Creek and the north side of the Square Buttes, 6, 22 and 44 being very close together and just north of the creek. It is possible that they have been plowed up recently.

Number 42 is located to the southwest of Mandan on Heart River and coincides with information obtained by Dr. Gilbert L. Wilson from an old Mandan, Butterfly. Butterfly said that the Fort Lincoln and Motsiff sites were Mandan and that the first Hidatsa village founded was up Heart River from the Motsiff site a short distance.

In publishing Mr. Steinbrueck's list, his numbers are given together with our own names for such sites as are included in our list.

Mr. Steinbrueck had the advantage of working at a time when there was little settlement over most of the region and not much plowing had been done. He was a careful worker and there is little doubt but what the additional sites which he gives were located as described.

Mr. Steinbrueck's list follows:—

1. NW 1/2 NW 1/4 Sec. 5 and NE 1/2 NE 1/4 Sec. 6, Twp. 137, R. 80 (Badwater).
2. Partly on NE 1/4 SW 1/2 and partly on lots 3 and 4, Sec. 13, Twp. 138, R. 81 (Fort Lincoln).
3. N 1/2 and S 1/2 SW 1/4, Sec. 35, Twp. 139, R. 81 (Motsiff).
4. SE 1/4, Sec. 27, Twp. 139, R. 81 (Scattered Village Site).
5. Part SE 1/4 SW 1/4 and part Lot 1, Sec. 33, Twp. 140, R. 81 (Otter Creek).
6. Center of S 1/2 Sec. 6, Twp. 140, R. 81 (a new site).
7. SW 1/4, Sec. 32, Twp. 143, R. 81 (Pretty Point).
8. SE 1/4, Sec. 30 and NE 1/4, Sec. 31, Twp. 143, R. 81 (Lower Sanger).
9. SW 1/4, Sec. 19, Twp. 143, R. 81 (Upper Sanger).
10. NE 1/4, Sec. 6, Twp. 143, R. 83 (Fort Clark Town site).
11. NW 1/4, Sec. 37, Twp. 144, R. 84 (Old Fort Clark historical village).
12. Four to five miles below Fort Yates, Cheyenne.
13. Two miles above Fort Yates at second Day School (Slob Town Cheyenne).
14. Center of S 1/2, Sec. 10 and N 1/2, Sec. 15, Twp. 134, R. 79 (Cannonball).
15. Lot 3, Sec. 14, Twp. 135, R. 79 (Fort Rice).
16. E 1/2 SW 1/4, Sec. 11, Twp. 135, R. 79 (a new site).
17. E 1/2 NW 1/4, Sec. 11, Twp. 135, R. 79 (a new site).
18. Center N 1/2, Sec. 8 and S 1/2, Sec. 5, Twp. 136, R. 79 (Huff).
19. SW 1/4, Sec. 5 and SE 1/4, Sec. 6, T. 136, R. 79 (a new site).
20. NW 1/4, Sec. 14, Twp. 139, R. 81 (Boley).
21.
22. SW 1/4, SW 1/4, Sec. 6, Twp. 140, R. 81 (a new site).
23. Part NW 1/4 and part NE 1/4, Sec. 14, Twp. 141, R. 81 (a new site).
24. N 1/2 SW 1/4, Sec. 14, Twp. 141, R. 81 (a new site).
25. NE 1/4, Sec. 17, Twp. 142, R. 81 (Molander).
26. SW 1/4, Sec. 31, Twp. 143, R. 81 (Smith).
27. NE 1/4, Sec. 36, Twp. 144, R. 82 (Hensler).
28. SE 1/4, Sec. 26, Twp. 144, R. 82 (Greenshield).
29. SE 1/4, NE 1/4, Sec. 34, Twp. 144, R. 83 (Mandan Lake).
30. Center where 6 and 7 of Sec. 16 and NE 1/4 and NW 1/4 join Sec. 21, Twp. 144, R. 84, (Deapolis).
31. S 1/2, Sec. 17, Twp. 144, R. 83, New or meant for 84–lost site, destroyed by railroad.
32. Sec. 33, Twp. 145, R. 84 near mouth Knife River, Stanton (Amahami).
33. NE 1/4, SE 1/4, Sec. 33, Twp. 145, R. 84 (Lower Hidatsa).
34. NE 1/4, NE 1/4, Sec. 33, T. 145, R. 84 (Lower Hidatsa).
35. Near center, NW 1/4, Sec. 21, Twp. 145, R. 84 (Big Hidatsa).

36.
37. S 1/2, NE 1/4, Sec. 30, Twp. 136, R. 78 (Shermer).
38.
39. NW 1/4, Sec. 2, Twp. 139, R. 81 (Sperry).
40. NE 1/4, Sec. 21, Twp. 140, R. 81 (Burgois).
41. Part NW 1/4, Sec. 9 and SE 1/4, Sec. 4, Twp. 140, R. 81 (Larson).
42. NE 1/4, NE 1/4, Sec. 33, Twp. 139, R. 81 (a new site).
43. NW 1/4, Sec. 10, Twp. 136, R. 80 (Eagle's Nose).
44. Lot 7, Sec. 34, Twp. 141, Range 81 (a new site).

Survey of Village Sites in 1919.

In conclusion are given some details from a survey made in 1919 in conjunction with Dr. Spinden, a survey which included all of the known sites on both sides of the Missouri from the Cannonball site to the Burgois site. This area included all of the older sites to which but little attention had previously been given; none of the actual historical sites were visited.

Fourteen sites were examined, and all were mapped where sufficient trace remained for mapping to be possible. Small representative collections of pottery and other artifacts were sought at each site from which some rather interesting data have since been derived. The sites visited were for the most part the very oldest ones which can be connected up with the Mandan, and which traditionally mark the earliest advent of that people into the region. The following list names the sites seen in order going upstream:—

The Cannonball site, the Fort Rice site, the Shermer site, the Glencoe site, the Huff site, the Eagle's Nose site, the Holbrook site, the Bad Water site, the Fort Lincoln site, the Motsiff site, the Ward Site, the Sperry site, the Boley site, the Burgois site.

These sites have all been described or mentioned previously, with one or two exceptions, but we shall give a brief account of them as observed on this survey, taking them up in turn.

The Cannonball Site. (No. 14.) This site was gone over rather carefully. It was found that much of the area previously supposed to belong to the site gave no evidence of it on close examination. Even with this lopping off, however, the site is a large one. It was mapped as well as possible, in view of the fact that part has been plowed, and all is rather indistinct. There is rather clear evidence of two series of house rings, one much more plainly marked than the other, and superposed upon it. The rings do not seem to be crowded even under these conditions. Some difficulty was experienced in getting a collection of artifacts, most being found in the section which was occupied by a patch of corn. This scarcity of artifacts may be due either to short occupancy or to extreme age which often operates to make finds of that sort procurable only at a considerable depth. Some fifty-six pieces of pottery were secured in all, most of which were noticeable for their coarseness and lack of ornamentation.

The Fort Rice Site. (No. 15.) This site is at present almost indistinguishable, having been so many times plowed and seeded, a slight rolling of the surface being about the only evidence to show house rings. Pottery and artifacts were scarce, but a small collection was gotten after some search. All rim pieces found showed decoration and the quality seemed superior to that of the Cannonball site. Quite a proportion of the sherds were red.

The Shermer Site. (No. 37.) This site on the east side of the river has been known for some time, but never described by anyone who had visited it. It proved to be very interesting. With the exception of a small corner which has been plowed and was occupied by growing corn at the time observed, the site is in very good condition and was easily mapped. It is some three miles south of Glencoe, North Dakota, in a rather rough country with several bad-land buttes in the vicinity, and far removed from general travel. The site lies on the edge of a rather low bench with a broad view over the river bottom to the west. It is bounded on the north by a shallow coulée and overshadowed on both the north and south by higher bluffs. This site is one of those in which bastions play a part in the fortifications. A wall and ditch seem to have surrounded the whole site except along the bench edge and the wall projects at intervals into well made bastions. The house rings are fairly close together though not crowded as in some of the later sites. (Fig. 11.) The amount of pottery and artifacts present and easily dug up would indicate a rather lengthy period of occupancy, as would the depth of deposit in places along the bench edge. 123 potsherds were found together with a number of bone and stone articles. The pottery was of good quality with nearly all rims showing ornamentation. About one-fifth of the sherds were red or brown.

The Glencoe Site. About two miles above the Shermer site on the edge of a high bluff with deep coulées both above and below, very indistinct traces of another possible site were discovered. The site has apparently been cultivated for some time. At present there are no indications of house rings or boundaries, except in the fading off and disappearance of artifacts. Doubtless this site was only a temporary one, although enough potsherds were found to show that it was more than a camp en route.

The pottery seems to resemble very closely in its general characteristics that of the Shermer site.

The Huff Site. (No. 18). This site proved perhaps the most interesting of any visited, especially because it is in the very best-preserved condition of any of the extra ancient sites, never having been plowed or materially disturbed. Some of the other nearby sites may have presented as interesting and unusual features, but they are now so nearly obliterated that it is impossible to tell. The map made showed many features which differentiated this site from any of the others, the most prominent feature being its almost perfectly rectangular shape. The rectangle lying along the high bluff overlooking the river is well outlined by a wall and ditch, still of considerable depth, with a number of regularly placed

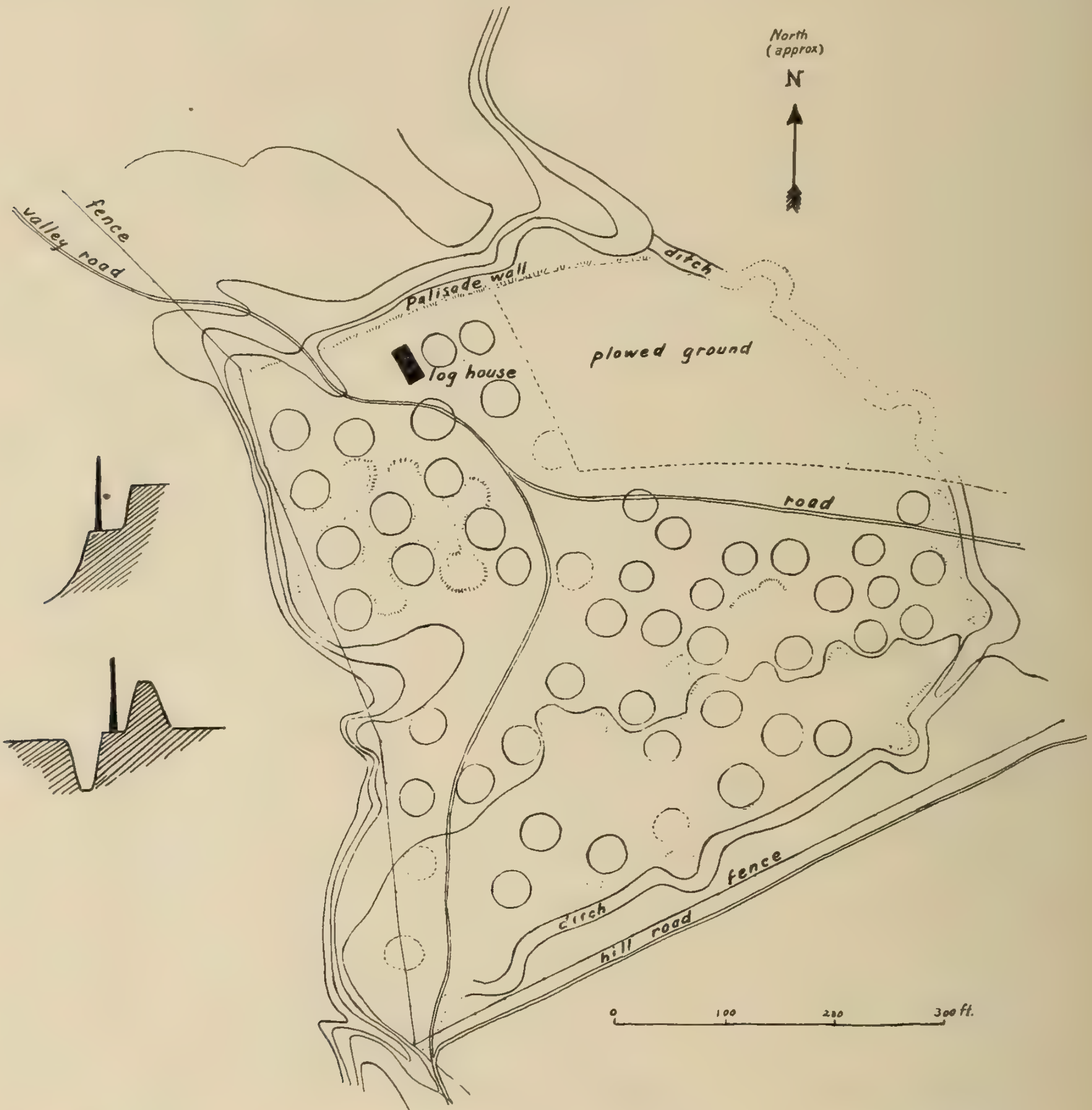

Fig. 11. Shermer Site (No. 37 on map), showing Detail of Wall and Ditch and of Palisaded Bluff.

bastions. The river side is protected only by the very precipitous bank. An area of about twelve acres is enclosed within the wall, making this perhaps the largest enclosed site we have found. (Fig. 12). Most of this site is owned by the North Dakota State Historical Society.

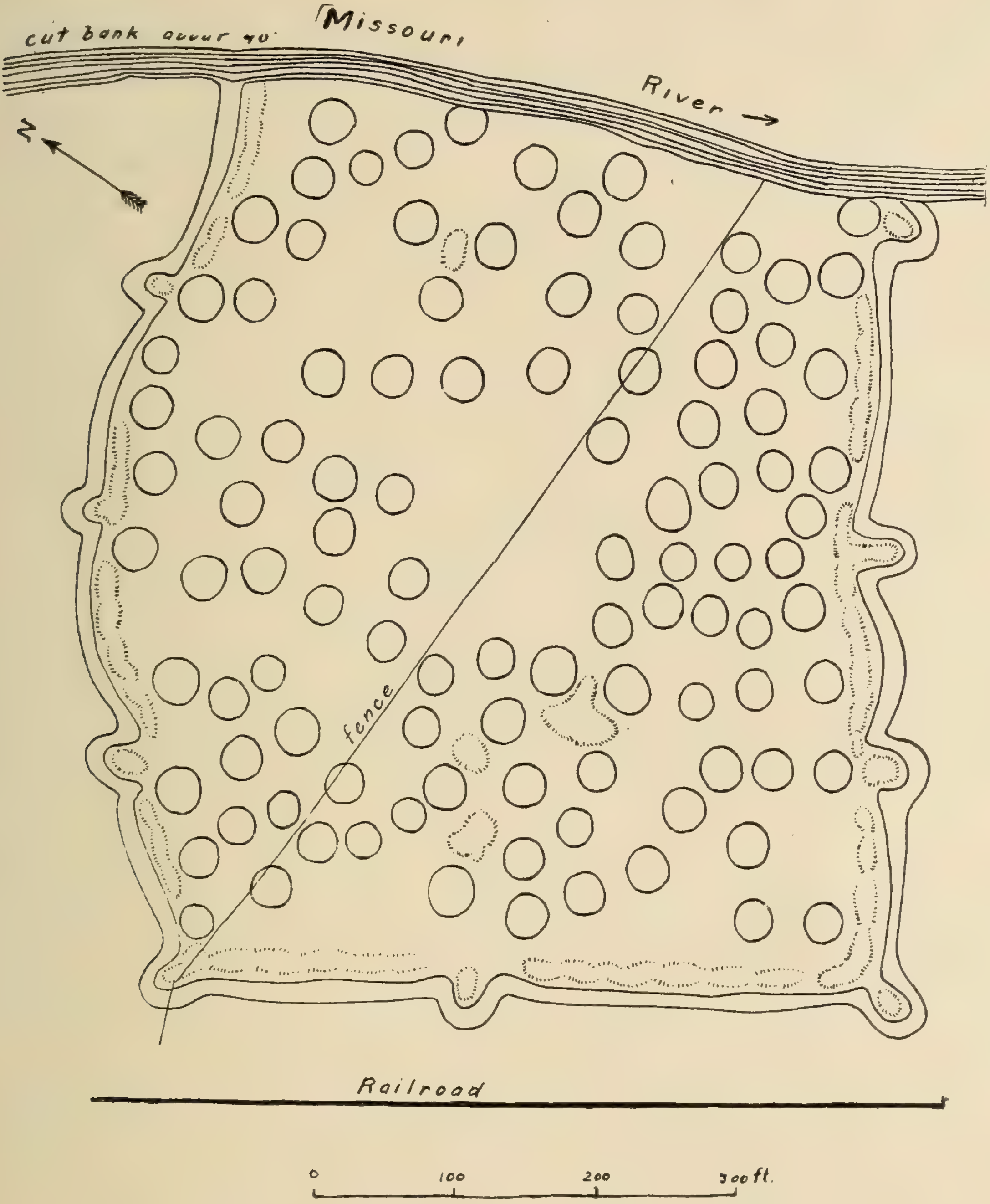

Fig. 12. Huff Mandan Site (No. 18).

A coulée cuts into the bluff a short distance beyond both the north and south ends of the site. A bastion occurs at each corner as well as those at regular intervals along the three sides. Within the wall, the ground now is comparatively level, although the house rings are easily distinguishable. Apparently the site has drifted in with sand and dust, as very little trace of occupancy can be found without digging well down beneath the present sod. The house rings are spaced much further apart than usual and seem to be laid out more or less in lines or rows with linear areas that might pass for streets. Pottery found here seems to resemble strongly that from Fort Rice, and the Shermer and Glencoe sites, although it was much more difficult to find in quantities since none of the area had been plowed. In connection with the unusual features of this site, it is interesting to recall its traditional importance. Supposedly this is the site of the first village built by the culture-hero chief, Good Furred Robe, when the Mandan reached this vicinity. One Mandan tale relates that the site was laid out with straight lines, the houses more or less in rows, to imitate the laying out of a field of corn, all as directed by the chief. A number of the oldest stories are also connected up with this and the Eagle's Nose sites.

The Holbrook Site. (No. 46.) This site has been referred to previously, and described some years ago in a paper for the "Anthropologist." The description at that time is as follows:—

> The site extends along the bluff about twelve hundred feet, the depth back up the gentle slope being about six hundred feet. A ditch ran from the north end of the village on the edge of the bluff in a flattened semi-circle to the south end where it terminated at the bluff edge which is quite steep all along here. The ditch was traceable for the whole distance and the larger mounds seemed to skirt the inner side of the ditch, with lower mounds and barely distinguishable depressions in the enclosed area.[1]

Since the above was written all traces of mounds, ditch or rings have disappeared, but no great difficulty was experienced in finding a good collection of potsherds and other artifacts. It will be noted from the description above that this was a very large site which may originally have closely resembled that at Huff, as even when first observed long cultivation had destroyed most of the details of construction.

The Eagle's Nose Site. (No. 43.) Our next site is the unusual one of Eagle's Nose on the west side of the river. This has already been described, and is almost directly across from the Holbrook site. Artifacts of any sort seemed to be pretty far below the sodded surface here and some trouble was experienced in getting pottery fragments; in fact what was found was for the most part only of the heavy, crude and lasting type.

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[1] Will, G. F., "Some New Missouri River Valley Sites in North Dakota" (*American Anthropologist*, N. S., vol. 12, pp. 58–60, 1910), 59.

Bad Water Site. (No. 1.) This site on the west side is located about a quarter of a mile above Little Heart or Bad Water Creek of the Mandan. The location is on the gentle slope of a hill which descends to the low bluff edge. Unfortunately it has been practically destroyed, part having been frequently plowed, part being occupied by a wide graded road, and most of the rest effaced by a wide railroad cut. About all that could be done was to secure a small collection of pottery and artifacts. Apparently this also was a site of considerable area and would have been very interesting for comparison with that at Huff and the Holbrook site. This site is mentioned frequently in Mandan traditions.

Fort Lincoln Site. (No. 2.) About five miles further up we come to the well-known and important site of old Fort Abraham Lincoln. This has been previously described. On this occasion it was mapped, and a good collection was obtained. The deposits of débris are very deep here and long occupancy until rather more recent times than in case of the sites lower down is suggested by the fact that artifacts are plentiful even on the surface, and the ground is only partially sodded over. (Fig. 1.)

Motsiff Site. (No. 3.) Three miles further up, and again on the west side is another well-preserved and apparently long occupied site. Some traditions give this as the seat of the Hidatsa while living in this area, while others call it an offshoot of the Fort Lincoln Mandan site. It lies on the point of a bench some thirty feet above the bottomland and along the base of which Heart River flows. It is cut or perhaps bounded on the west by a deep ravine, a point somewhat difficult to determine. There are traces of a wall and ditch; the house rings are of unusual depth; and there are a number of very large mounds scattered over the village site. This site, with the Burgois, Boley, and Larson sites, seems to be of a very similar type and appearance. The site was mapped and a good collection of pottery and artifacts found, as they were rather plentiful. (Fig. 13.)

The Scattered Village Site. (No. 4.) This site is situated in the eastern part of the city of Mandan, is entirely built over or occupied by gardens, and is practically destroyed.

The Ward Site. (No. 47.) The next site is on the east side. It has already been mapped and described. Particular attention was however, directed to the bastion in view of the occurrence of this feature further down. In this case, a wall and ditch cut off a promontory of considerable height and inaccessibility, these being on the east and including two bastions very similar to others observed. The ditch extends out onto the steep sides of the promontory as a sort of terrace. A good collection

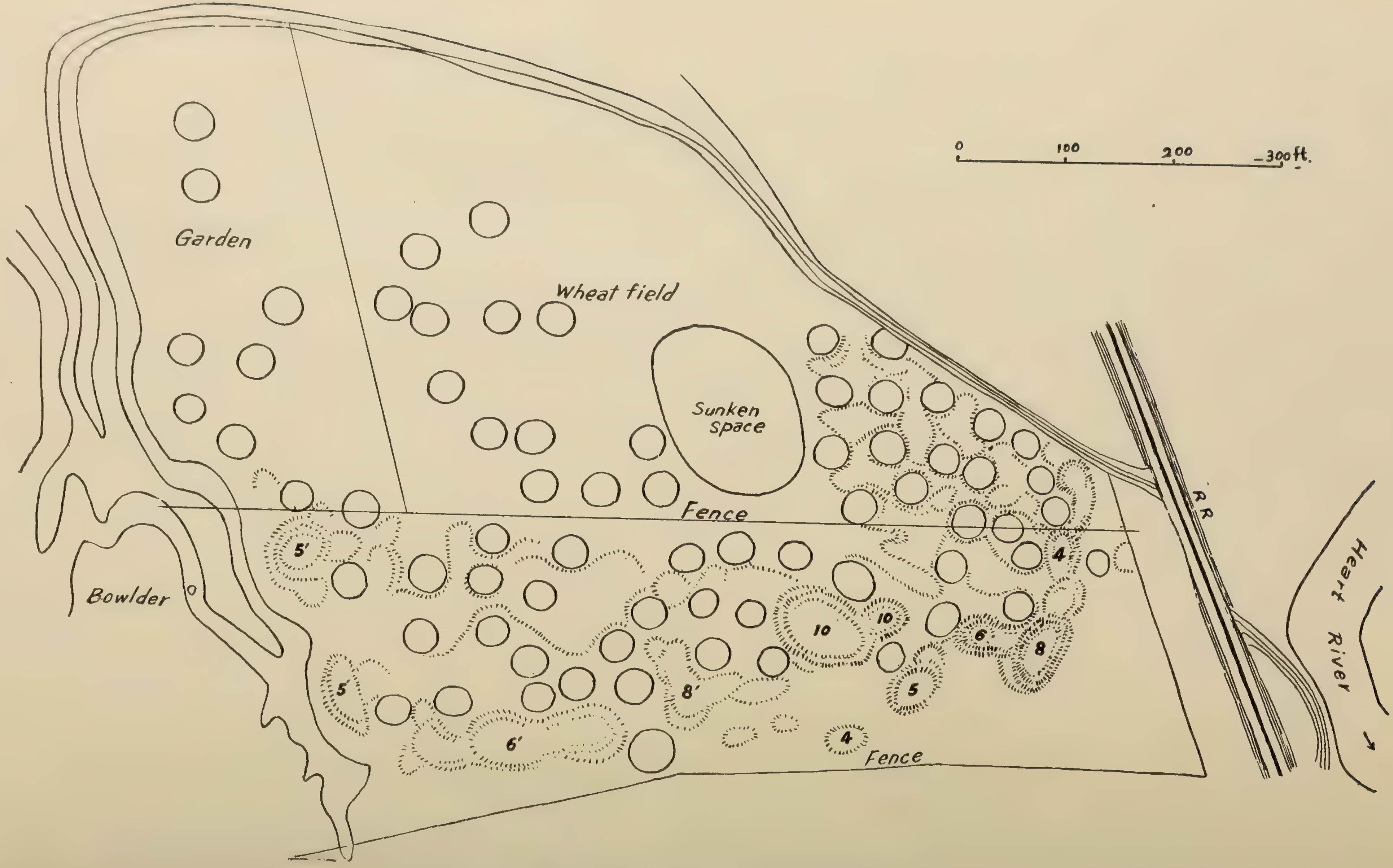

Fig. 13. Motsiff Mandan Site (No. 3).

was secured here, although it was necessary to go below the sod to find anything.

The Sperry Site. (No. 39.) Four miles further up on the same side is the Sperry site, located on the point of a high bluff where Burnt Creek enters the Missouri River bottoms. The creek flows along the east and north base of the bluff while the river bottoms are along the west base. This site differs somewhat in general appearance from others in the region. It is rather faint in places, but appears to show a ditch and wall across the narrow neck of the promontory, with the ditch continued as a terrace for some distance along the east side. The site was mapped and a good collection of pottery and artifacts taken without much difficulty. A significant feature was the easy discovery of several glass trade beads upon the ant hills. This is the only site in the region in which evidence of contact with the whites has been found. It would serve perhaps to fix the site as more recent than others in the region, and renders significant a claim by an Arikara that it was built by his people.

The Boley Site. (No. 5.) Almost directly across the river from the Sperry site is the Boley site, already described. A map was made at this point although part of the site is obliterated by a railroad cut. A good collection was also made here with great ease as pottery and artifacts were very plentiful.

The Burgois Site. (No. 40.) This site has been better described and more frequently mapped than any of the others. Only a short time was spent here in getting a small collection of potsherds.

Conclusion.

In pursuing the above-described work an impression gradually grew up that there were two rather distinct types of sites in the region, distinct enough in fact so that nearly every site could be referred readily to one or the other group. The center for one type seems to be below the Heart River, with the Huff site as perhaps the best representative. The second type is found at and above the mouth of the Heart River altogether, although the lower sites seem to overlap. A basis of racial difference seems hardly practicable as sites of both types can, with little question, be attributed to the Mandan. A reasonable conclusion therefore seems to be that the two types must represent a difference in time and culture between two periods of occupation by the same tribe. This agrees well with the historical traditions of the Mandan, and seems a fair hypothesis although much longer and more detailed work would be required to demonstrate it fully.

As to the actual differences, the descriptions and maps will give some of them, but unfortunately many of the very old sites were beyond mapping. In our pottery collections, however, there seems to be an opportunity for the working out of pronounced differences which seem to go with the two types of sites. The collections were not sufficiently large to get at many differences, but one at least seems to be pretty clearly shown.

The differences which we believe to be shown by a general examination of the sites are as follows: The lower or older sites are more heavily grassed over when undisturbed, artifacts are almost impossible to find until a thick layer of sod has been removed, whereas on the upper sites the sod is thin or absent and many artifacts are present on the surface. In the older sites the area is much larger for the same number of house rings, the rings are spaced further apart, the area is more level with only low mounds occurring occasionally, the carefully planned wall and ditch with bastions occur with the exception of the Molander site only in the lower territory where we find three marked examples of it with most of the other sites too nearly obliterated to show whether this feature was present at all. The examples are the Shermer, Huff, and Ward sites. As to the Molander site, in many features it seems to resemble the older group and it may have been built by a pioneer group from the older villages. The Huff site is a wonderful example of well worked out fortifications, and unquestionably antedates any possible white influence. In connection with this feature of fortified villages with bastions it is interesting to recall Vérendrye's descriptions of such features at the Mandan villages.

As has been said, differences in pottery seem to agree with the ones enumerated above. Other artifacts seem to be pretty much the same for all sites and do not occur in such quantities as does the pottery. Some difficulty was encountered in working out a graphic plan for showing the difference in pottery as nothing but small fragments were secured from any site. However, a rather arbitrary plan of tabulation was worked out which seemed fairly satisfactory, and which at least brings out one difference very clearly. It is possible that with much larger collections a number of other very interesting features could be worked out. As our collections varied much in numbers of pieces only broad and unmistakable features could be differentiated.

The plan used is the tabulation of all pieces from each of the different sites according to a list of specific features of decoration, quality, etc. The following features were selected for tabulating: the number of red or brown and black pieces from each collection; the number of plain, unornamented rims from thin ware; the number of plain, unornamented rims from thick ware; the number of pieces showing exceptionally fine and skilful work; the number of pieces showing incised herring-bone pattern decorations; the number of pieces showing fingerprint ornamentation; the number showing decorative ears, knob or lugs on the rim; the number showing decoration by pressing something resembling a string of flat beads into the wet clay; the number showing a decorated border around the top of the pot; the number showing the rim itself decorated as well as the border; the number with outside and inside decorated border, the number showing outside and inside border and rim, all three decorated; the number showing the string mark decoration widely spaced; and the number showing these string marks spaced closely together.

The table worked out from collections from the fourteen sites is given herewith.

Site	Red	Black	Plain thick rim	Plain thin rim	Herring-bone pattern	String lines close	String lines wide	Ears	String decorated edge	String edge and border	String edge, border and inside	Finger mark decorations	Very fine	Only body decorated
Cannonball	7	49	8	0	0	0	3	0	4	0	0	3	0	2
Fort Rice	12	14	0	0	0	0	6	1	2	0	0	3	0	6
Shermer	25	98	17	1	3	0	14	1	11	0	0	14	3	15
Glencoe	20	63	0	2	5	2	8	1	9	1	0	2	4	9
Huff	5	32	1	0	1	0	11	0	1	0	0	1	0	11
Eagle Nose	3	60	13	0	0	1	14	2	3	3	5	3	1	7
Bad Water	5	59	7	7	1	0	11	2	2	0	0	16	0	11
Holbrook	7	23	0	0	0	3	17	1	5	1	1	0	2	10
Ft. Lincoln	46	115	4	2	18	32	16	0	5	14	1	19	6	36
Motsiff	2	19	4	2	2	8	1	1	1	1	4	2	1	6
Ward	20	151	1	0	2	11	37	2	1	0	0	7	0	41
Sperry	2	53	8	0	1	22	1	1	10	1	1	1	3	9
Burgois	9	32	11	0	1	14	2	2	3	3	2	4	2	5
Boley	21	115	17	8	5	35	6	1	12	2	2	2	1	29

String ornamentation is, of course, the predominating method used in this region and hence most of our differentiation is based upon variations in that feature. A glance at the table shows that the single feature which shows marked and certain differences between sites is that of widely or closely spaced string-mark lines. Not only is this difference pronounced between sites, but also between groups of sites which coincide with the groups as determined by other data. The sites grouped as the lower and older are the Cannonball, Fort Rice, Shermer, Glencoe, Huff, Eagle's Nose, Bad Water, Holbrook and Ward. The later or upper sites are Ft. Lincoln, Motsiff, Boley, Sperry, and Burgois.

The figures from the table demonstrate that all of the older sites have a very heavy proportion of the pottery with string marks with the lines widely spaced on the pot surface. On the other hand, we find the preponderance of pottery showing the narrowly spaced lines to be almost as great in the newer group of sites. The Holbrook and Ward sites, uppermost, and presumably latest of the older group seem to show more or less of a transition, the Holbrook site showing seven wide and nine narrow, the Ward showing thirty-one wide and fifteen narrow. Larger collections might change indications in the case of these two but could hardly be expected to do so in the cases of most of the other sites. Incidentally it must be noted that the Sperry site, indicated by some evidence as the youngest site, shows the greatest preponderance of the closely spaced line pieces.

An approximate total of the pieces in the collection from each site may be obtained by adding the number of red or brown and black pieces for each site.

MISSOURI RIVER

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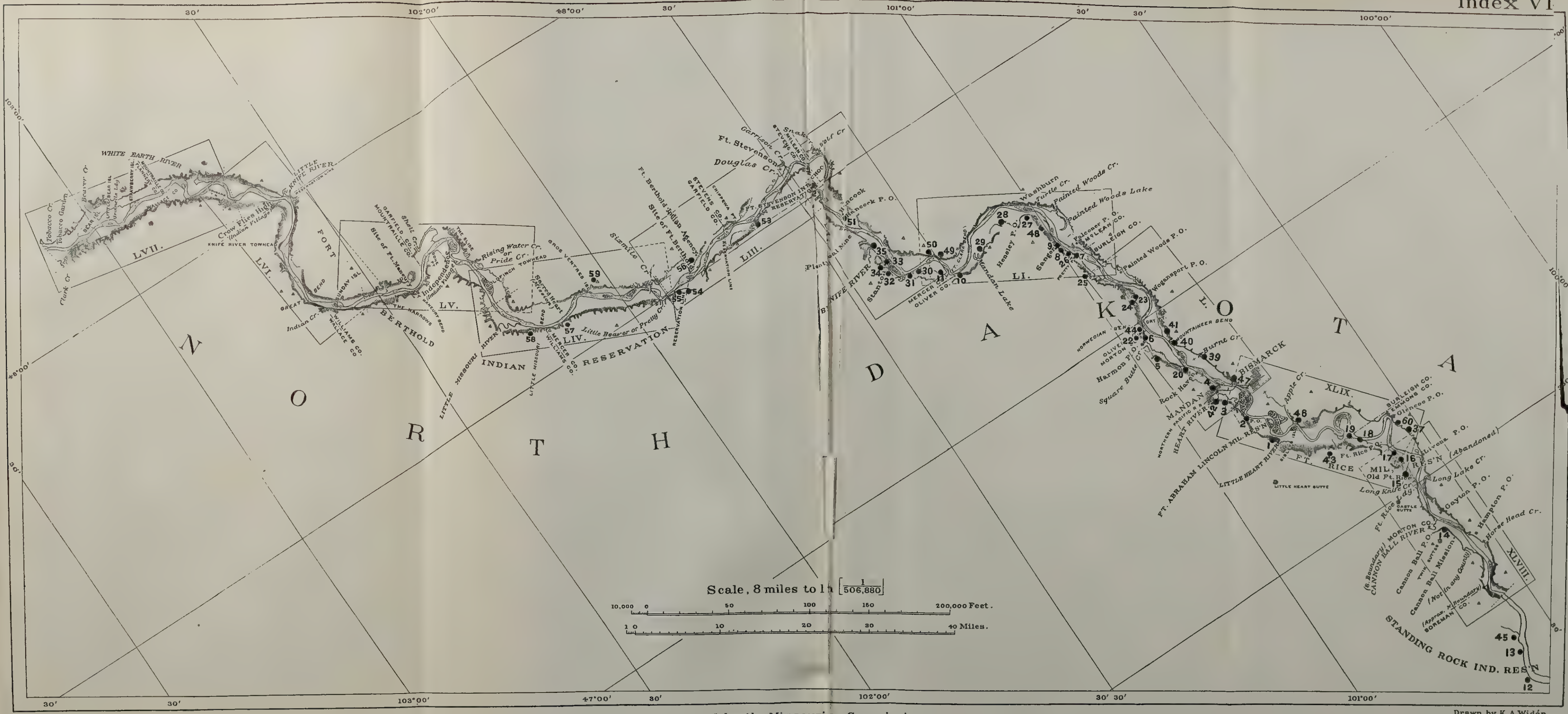

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1894.

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Fig. 14. Archaeological Sites alo e Missouri River.
(The numbers refer t text.)

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